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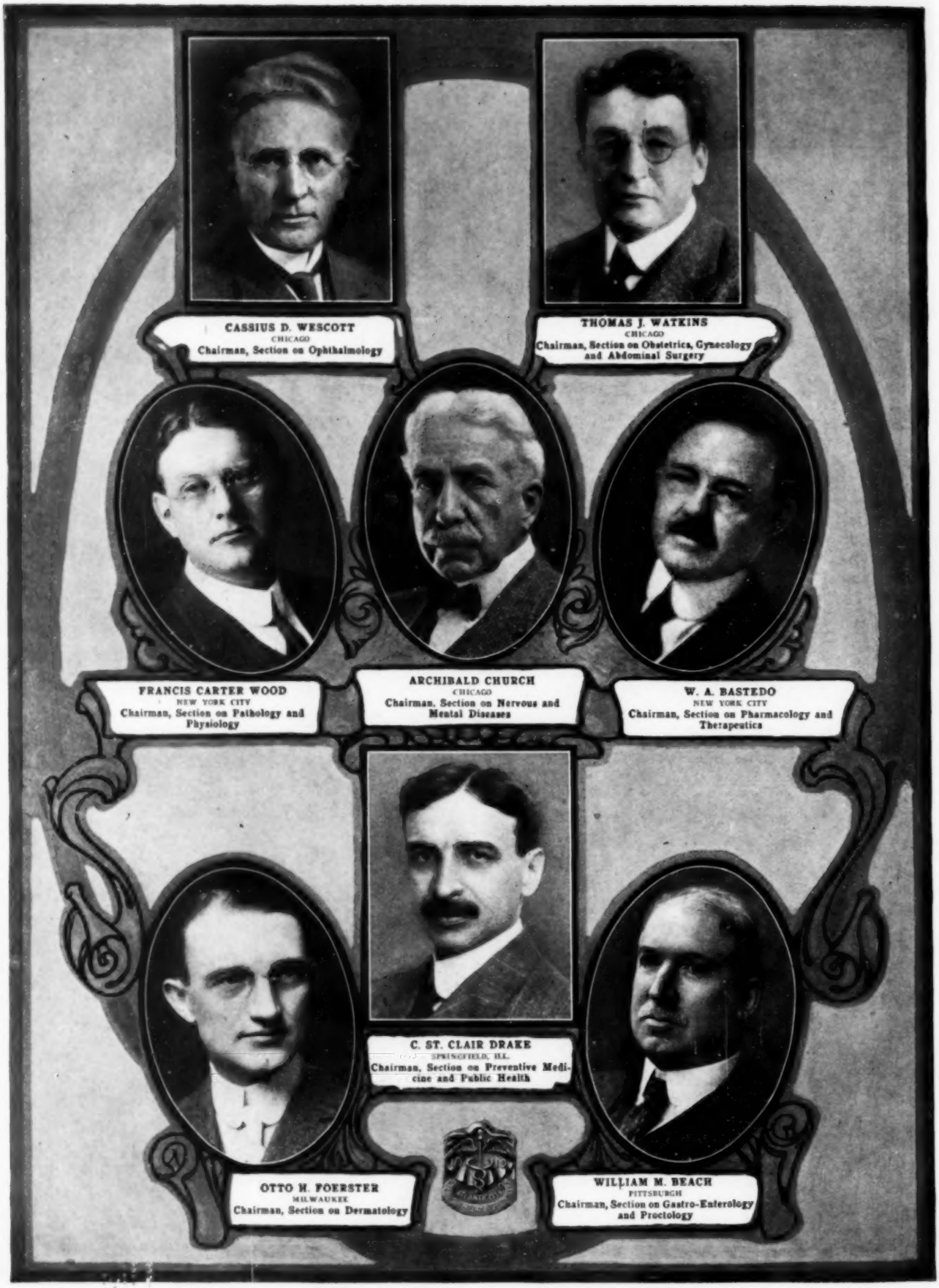

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THE ETIOLOGY AND TREATMENT OF THE DIARRHEAL DISEASES OF INFANCY

LEWIS WEBB HILL, M.D.

BOSTON

The prevention of infant mortality is one of the most important medical questions of the day. More babies die every year from diarrheal diseases than from any other one cause. These diseases are largely preventable, and in most cases respond to proper treatment, whereas many improperly treated patients die. It is, therefore, essential in any affort to reduce infant mortality that all physicians dealing with children should have as clear an idea as possible of these conditions.

Any diarrhea is caused by increased intestinal peristalsis. This increased peristalsis is caused by some irritant acting on the intestinal mucous membrane, and it is best to classify diarrheal conditions according to the type of irritant that is causing the trouble. Broadly speaking, according to this method of classification the diarrheal diseases of infancy may be divided into three groups: (1) mechanical diarrhea, due to mechanical irritation; (2) fermentative diarrhea, due to chemical irritation, and (3) infectious diarrhea, due to bacterial irritation.

In the first group, the irritation is mechanical and is caused by undigested pieces of food or by such things as fruit skins or seeds.

In the second group the trouble is caused by irritating products from fermentation or putrefaction of food in the intestine, brought about in several different ways, as we shall see later. There is no infection by bacteria of the intestinal mucous membrane in this condition; it is the intestinal contents which are infected.

In the third group there is actual invasion of the intestinal mucosa by bacteria, with catarrhal inflammation, or often actual ulceration. It is of great practical importance to bear in mind these distinctions, as the feeding for the different sorts of diarrhea may be entirely different; what is proper for an infectious case might be fatal in a fermentative case. I cannot emphasize too strongly that not all infantile diarrheas are the same, and that they should not all be treated in the same routine manner. The first essential is a correct diagnosis, and in order to arrive at this the etiology of the three groups must be thoroughly understood.

I. MECHANICAL DIARRHEA

This type of diarrhea is fairly common, and is more likely to be seen in children above the age of 1 year than in those younger. It is caused by mechanical irritation of the delicate intestinal mucosa from such things as grape skins, cucumbers and raw fruit. It is a common practice among many ignorant people to feed all sorts of indigestible foods, particularly raw fruit, to small children from 1 to 5 years of age, long before they are ready for it. Some children seem to be able to stand it, but the majority cannot, and no raw fruits should be fed to any child under 5 years old. In many cases the mechanical irritation of the intestine paves the way for organisms to attack it in the irritated places so that often a mechanical diarrhea may change to one of the true infectious type. A typical case of mechanical diarrhea would run about as follows: A child of 2 is given a peach to eat, skin and all. The peach may be ripe, or it may not be. Soon after, the child is taken severely sick with vomiting and diarrhea. The stools are usually five or six in the twenty-four hours, and are likely to contain undigested peach pulp and skin. The vomiting may be so severe as to be uncontrollable, and it is in this type of diarrhea that gastric disturbance is most common. In some cases there may be a tremendous amount of toxemia, and not infrequently these children die, partly, I believe, from acidosis caused by the severe vomiting, and partly probably from the absorption into the circulation through the injured intestinal wall of toxic material or possibly bacteria from the intestine. Every practitioner of experience has seen cases such as this. Last summer I saw a boy of 6 at the Children's Hospital who died in forty-eight hours from eating a raw cucumber. In ordinary cases the child will be well in two or three days, and the diagnosis and treatment offer no difficulty save in those cases which develop infectious diarrhea.

The treatment consists simply in purging the child with casor oil or calomel, putting him to bed, giving him barley water or some other gruel for twelve hours, with plenty of water, and then starting him on a bland, nonirriating diet of cereal and boiled skim milk. This is the simplest and least important of the infantile diarrheas.

II. FERMENTATIVE DIARRHEA

This is a more complicated and important condition, and is the most common diarrhea of babies. It is most likely to occur in children under 1 year, but may be seen at any age. It is brought about by abnormal decomposition of food in the intestine, caused either by the bacteria which are already there or by bacteria introduced from without. The products of fermentation irritate the intestinal mucosa and cause a diarrhea, but the mucous membrane is not attacked by bacteria. The abnormal decomposition is usually that of sugar, and may be caused in several ways. In order for sugar fermentation to occur two conditions must exist: unab-

sorbed sugar in the intestine, and bacteria in the same portion of the intestine to attack it. Under normal conditions the small intestine is relatively sterile, the large intestine is swarming with bacteria. Therefore, any conditions that allow a considerable amount of undigested sugar to proceed lower than is normal in the digestive tract, or which will allow bacteria to flourish in the small intestine, where there is always unabsorbed sugar, will bring about sugar fermentation. Let us consider some of these conditions.

1. *Overfeeding with Sugar.*—If too high a percentage of sugar, or if too much food, thus giving a large amount of sugar, is fed to a baby, all of the sugar cannot be absorbed. What is not absorbed passes into the lower part of the intestine and the ever-ready bacteria there attack it and ferment it.

2. *"Parenteral" Infections.*—It is well known by every practitioner that babies suffering from such affections as rhinitis, bronchitis or otitis media are likely to have loose, greenish stools. The probable reason for this is that in these conditions the digestive juices are reduced in amount, so that sugar is not digested so well as normally, and thus is fermented; or that under the general debilitating influence of any extra intestinal disease the intestinal mucous membrane loses some of its antibacterial power and thus allows bacteria to flourish higher in the intestine than they would normally.

3. *Overheating.*—Overheating of the body is an important cause of sugar fermentation. This is well known clinically and has also been proved by animal experimentation. The practice of dressing babies too warm in hot weather is undoubtedly the cause of a good many cases of sugar diarrhea. The explanation of this is probably very similar to that for "parenteral" diarrhea. Owing to the debilitating heat the digestive juices are lessened in amount, and the efficiency of the mucous membrane is impaired in such a way that undigested sugar is permitted to pass down where bacteria can get at it, or the bacteria are allowed to come up and flourish where the sugar is.

4. *Nervous Exhaustion and Excitement.*—These may bring about sugar fermentation, probably in a way similar to that in which it is brought about in the last two conditions I have discussed. However, it is not a particularly frequent or important cause of sugar fermentation.

5. *Constitutional Weakness.*—There are certain babies who, on account of constitutional weakness, never seem to be able to take much sugar, or indeed much food of any sort, without diarrhea. It is probable that their digestive juices are inefficient, and that there is always a great deal more bacterial growth in the small intestine than there should be.

The types of sugar fermentation enumerated above are all brought about by the normal intestinal bacteria's taking advantage of the abnormal conditions of the host. The next and by far the most important type of sugar fermentation is caused by abnormal bacteria introduced from without in bad milk. Bad milk is, I believe, the most potent source of sugar fermentation that there is, and gives rise to the most severe cases of diarrhea. There is probably no specific organism that accomplishes this, although investigators have tried at various times to look on the condition as a specific infection. A great many different sorts of bacteria, when introduced into the small intestine, may bring it about, and probably two of the most common offenders are the *Bacillus aerogenes-capsulatus* (gas bacillus) and the colon bacillus.

The foregoing will serve to show the main causes of sugar fermentation; let us now see what chemical processes are involved. When sugar is fermented by bacteria, acids are formed. These may be divided into two groups: the volatile acids, such as formic, acetic and butyric, and the nonvolatile acids, such as lactic. The volatile acids, particularly, are formed in large amounts, and are the ones which do the most harm. The nonvolatile acids are relatively harmless. It is surprising to see how much free acetic acid may be recovered from the stools of some babies with sugar fermentation, and when one takes into account its extremely irritating nature it is easy to see how much damage may be done. The volatile acids cause harm (1) by increasing peristalsis and causing a diarrhea by irritating the intestinal mucosa; (2) by injuring the mucosa in such a way that its antibacterial function is impaired, or to such an extent as to allow toxic material from the intestine to pass through into the general circulation, a thing which would never happen normally; (3) by drawing on alkali reserve of the body in an attempt to neutralize the excessive acidity, thus probably helping to cause an acidosis; and (4) by upsetting the normal chemical processes of digestion, most of which cannot go on satisfactorily in an excessively acid intestine.

DEGREES OF SUGAR FERMENTATION

In a rough way, sugar fermentation may occur in three degrees of severity, which vary a good deal in their chemical conditions and clinical appearance.

1. The condition may be of a very mild type, in which a normal baby has two or three very acid stools a day of a consistency rather looser than normal. These stools may be of the normal color, or slightly greenish, with usually only a little mucus. The baby is not sick, the condition is a very mild one and almost always clears up readily with proper treatment. Its importance lies in the fact that untreated, the condition may become severe, and may ultimately lead to most serious results. This may be seen at any time of year, and probably has nothing to do with bad milk.

2. It may be a more severe condition, usually seen in the summer during a "muggy spell," but may occur at any time. The baby will have from five to ten very loose stools a day, containing a good deal of mucus, and many small soft curds of undigested milk. He is fussy and irritable, but is not very sick in most cases. His buttocks are likely to be red and excoriated from the excess of acid in his stools. The temperature is usually from 99.5 to 101. In this section of the country, at any rate, I believe this type of diarrhea is caused more often by bad milk than in any other way. In other sections where all milk fed to babies is boiled as a routine, it may be more often caused by some of the other agencies already enumerated. The condition is a local intestinal one; the intestine has been irritated, the processes of digestion have been disturbed, but the baby's body chemistry as a whole has not been upset. The process has as yet caused no trouble further than in its original locus, the intestine. If the patient is properly treated, the disease should be arrested without difficulty; improperly treated or neglected, the baby may pass over into the state which I shall call Type 3, a much more serious condition ("alimentary intoxication").

3. In this case the baby is very sick. He usually has a high temperature, but in certain cases he may be so prostrated that the temperature is subnormal. The fontanel, abdomen and eyes are sunken, the skin hangs loosely on the flesh, and has lost its elasticity—all from a loss of water. There is a profuse watery diarrhea, ten to twenty stools in the twenty-four hours. The baby takes no interest in his surroundings, his mentality is very dull, and he may be roused with difficulty. The breathing is deep and sighing (hyperpnea), and the urine may show sugar and casts. This is the picture of "alimentary intoxication," and a most precarious and serious condition it is. Here the process originally starting as a local intestinal condition has progressed so that it has changed the general metabolism, and has perverted the chemistry of the entire body. There is a negative nitrogen and salt balance, there is loss of a large amount of fluid, very often severe acidosis, and last, but not least, it is probable that many injurious substances from the intestine are absorbed into the general circulation through the injured intestinal mucosa, thus adding to the severity of the condition.

I. TREATMENT IN VERY MILD CASES

Many normal babies are likely to have periods of mild sugar fermentation occasionally. In nearly all the following simple treatment will clear the condition up, often in twenty-four hours, and will prevent the development of a severe sugar fermentation. A purge is not necessary unless the baby has fever, and this is uncommon. All sugar should be omitted from the milk modification, and the solution boiled for three minutes. One teaspoonful of compound chalk mixture should be added to each bottle. Usually after twelve or twenty-four hours of this feeding the stools will return to normal, when sugar can be added gradually, and in two or three days the baby will be back on his regular modification.

II. TREATMENT IN THE MORE SEVERE CASES

Groups 2 and 3 may be considered together in the discussion of treatment.

1. *Purgation.*—It is a mistake to give a purge as a routine in every diarrheal disease. If there is any harmful material in the intestine which is not coming out as fast as it should, a purge ought to be given—otherwise not. It is not rational to purge a baby who is already having a great many loose stools a day and whose intestine is emptying itself of toxic material as fast as it possibly can. In such cases castor oil or calomel adds insult to injury. On the other hand, a baby who is seen at the onset, who has fever, and who has not as yet been emptied by diarrhea ought to be purged at once, and it is often striking to see how the temperature will drop and how much more comfortable the baby will be after a good cleaning out.

2. *Feeding.*—This is the most important part of the treatment, and it is in this that mistakes are most frequently made. After the initial purge the baby should be deprived of food for about twelve hours, being offered nothing but weak barley water. Many babies will take this readily when they will not take plain water. The object of the starvation is to empty the intestine as completely as possible and to discourage the further increase of bacteria by offering them no food on which to grow. The principles of feeding are the same in every severe case of sugar fermentation; the details may have to be modified according to circumstances.

The condition we are dealing with is caused by an excess of acid in the intestine from the fermentation of sugar by some organism or group of organisms which thrive on sugar. Such organisms are likely to be greatly diminished or to die out if their principal food supply is withdrawn. Therefore, the great principle in treatment is to offer a food which contains very little sugar, and a considerable amount of protein, for as a rule the organisms that thrive on sugar do not thrive on protein. Such a food can be prepared in a number of ways, depending largely on the resources of the people one is dealing with.

a. Albumin Milk.—This, or a modification of it, is the ideal food, and babies with sugar fermentation do better on it, I believe, than on any other. It is too difficult of preparation to be used among the ignorant, but an intelligent mother can make it satisfactorily. There have been numerous modifications of albumin milk, but the original preparation is probably as satisfactory as any. It is made by rubbing the curds from a quart of milk (prepared with essence of pepsin) through a fine sieve several times until they are in a finely divided condition. These curds are then mixed with a pint of buttermilk diluted with a pint of water. The resulting mixture contains fat 2.5 per cent., sugar 1.5 per cent., protein 3.5 per cent. Such a mixture as this offers practically no sugar for the sugar-splitting bacteria to grow on, and on account of its high protein content, it tends to make an alkaline intestine; in an alkaline intestine calcium soaps tend to be formed, which favor the formation of pasty, semi solid stools. The albumin milk should be fed in very small doses at first—perhaps one fourth as much albumin milk as the usual amount of milk the baby would take, with the balance made up of water. If it is borne well, the amount may be rapidly increased. As the baby improves and as the bowel discharges become less frequent, small amounts of sugar may be gradually added. The best sugar to use is some maltose-dextrin preparation, as it ferments less readily than lactose does. Albumin milk is only a temporary food and should not be continued longer than a few weeks.

In a large city where there is a milk laboratory it is usually simpler to have the milk prepared at the laboratory from cream, water and precipitated casein, as any amount of casein or of fat desired can be obtained in this way, thus better suiting the preparation to the digestion of the individual baby than when a stock formula is used.

b. Skim-Milk with Powdered Casein.—Another satisfactory feeding is with simple dilutions of skim-milk to which powdered casein has been added. There was until a year or two ago a product on the market which was a semisoluble calcium caseinate. It could be very readily mixed with skim-milk and water to form a gruel, and in this way it was possible to secure very low sugar percentages in combination with a high protein. In the summer of 1915 I fed a good many outpatients by this method, and got very good results, fully as good, I believe, as could have been obtained with the more complicated albumin milk. The chief advantage of the powdered casein method is its extreme simplicity. Since the war this preparation has been unobtainable, and, so far as I know, no other has been put on the market to take its place. There is an urgent

need for such a preparation, and it is a pity to see so many worthless proprietary foods on the market when powdered casein, which is really of great use, could be made so easily by almost any one of the proprietary food companies.

c. Lactic Acid Milk.—In some cases lactic acid milk or buttermilk feeding may be of value, the idea being that the lactic acid organisms of the buttermilk flourish in the intestine and supplant the organisms that are doing the damage. Buttermilk, also, is not very rich in sugar and contains a good deal of protein in an easily assimilable form. Unless fresh buttermilk can be obtained, it is best prepared at home, from skim-milk and cultures or tablets containing the lactic acid or Bulgarian bacillus. If it is desired to use the lactic acid principle, that is, flooding the intestine with lactic acid bacilli, it is a great deal better to use a lactic acid milk, than tablets or vials of the culture, as infinitely more bacteria can be given in the first way than in the second. It is worth while, however, if the baby will not take sour milk, to try the liquid cultures or the tablets. This plan of feeding is used a great deal. Some experienced pediatricians use the butter-milk principle constantly, some consider it of no value. As far as I know, there is no very good evidence one way or the other; some patients it helps, some it helps not at all, and it is time some one did some experimental work on the subject, for what little we really know about it has been handed down from the days of Metschnikoff, who first elaborated the idea.

d. Skim-Milk Dilutions.—The way most of us in the outpatient department of the Children's Hospital treat sugar fermentation is with skim-milk dilutions, usually beginning with a third or a half skim-milk, the rest barley water or water, and gradually increasing as the stools become better. By this method improvement is not so rapid as it is with albumin milk, but in most of the outpatient class of patients or with the ignorant part of one's private practice, complicated methods of feeding cannot be used, and simplicity is of paramount importance.

MEDICINAL AND OTHER TREATMENT

Colonic Irrigations.—If seen at the onset a high colonic irrigation with physiologic sodium chlorid solution may do a great deal of good by helping to empty the intestine. Later in the course of the disease, it does less good, and indeed is likely to do more harm than good by irritating and disturbing the child.

Water.—Next to the feeding, the free administration of water is of the greatest importance. The baby is losing a large amount of fluid from the body in the watery discharges, and it is vital to the chemistry of the body, for many reasons, that the blood and tissues should not be dehydrated. Therefore, as much water as possible should be given between the feedings, and if it cannot be administered in this way physiologic sodium chlorid solution should be given subcutaneously. Howland and Marriott believe that a large amount of the acidosis that is seen in these cases is caused by retention, owing to anuria, of acid sodium phosphate. Therefore, the free administration of fluid by keeping the kidneys active may prevent this complication or help to combat it when it has developed.

Sodium Bicarbonate.—We know now that a good many children with diarrheal disease die from acidosis. Acidosis is shown particularly by deep, tireless breathing, resembling that of air hunger. If this sign develops, sodium bicarbonate should be given at once, either by mouth, or, if not well borne by mouth, intravenously in the form of a 2 per cent. solution. Certain chemical changes take place in sodium bicarbonate after it has been sterilized, which make it very irritating, if given subcutaneously, so that it is never wise to give it in this way, unless a sterile salt is used, and added to the water *after the water has been boiled.*

Other Drugs.—Compound Chalk Mixture: This is, I believe, of value in many cases, as it helps in neutralizing the irritating acids that have been found in the intestine. The soluble alkalis are useless to give for this purpose as they are probably largely absorbed in the stomach, and never reach the intestine.

Opium: It is sometimes difficult to know whether or not to give opium. It is contraindicated if the bowel movements are very foul and few in number or if there is much evidence of toxemia. It is always contraindicated at the onset of an attack, as it is essential to empty the intestine and not to tie it up. In other cases it is distinctly indicated, and it is not good therapeutics to slavishly follow a set rule and to refuse to give opium in any case of diarrhea, as an experienced practitioner did with whom I saw a patient in consultation last summer. The child had been sick over a week, and was having from twenty to twenty-five loose, watery movements a day, with a great deal of straining and discomfort. She was much exhausted from all this, and still the doctor refused to give the small doses of paregoric I suggested because he "knew that it was always wrong to give opium in any diarrhea." In such a case as this, opium in some form, preferably paregoric, is distinctly indicated, for although diarrhea is undoubtedly a conservative process, it may exhaust the child so much that it does him more harm than good.

Bismuth: This drug is sometimes highly recommended, and again many authors say it is useless. It probably does more good in the true infectious type of diarrhea, when there is actual ulceration of the intestine, than it does in the fermentative type which we are discussing; in those diarrheas due to sugar fermentation, I should much prefer chalk mixture.

Stimulants: Stimulants are often needed, and there is probably none better than brandy or caffein. Epinephrin has been highly recommended by some, but its action is so transitory that its value seems somewhat doubtful, except to tide over a sudden collapse.

PROTEIN FORM OF FERMENTATIVE DIARRHEA

The protein form of fermentative diarrhea is not nearly so common as the carbohydrate form. In this condition the intestinal contents have been infected by bacteria which feed mostly on protein, and the resulting stools are brown and foul instead of being green and acid smelling. The general symptoms are similar to those of the carbohydrate form, but the differentiation of the two offers little difficulty owing to the difference in the stools. The treatment is the same as for the carbohydrate form, with the exception of the feeding. Here a low protein and a fairly high carbohydrate diet is needed. Ordinary milk modifications with low protein and high carbohydrate added in the form of lactose and starch sometimes work very well. This diarrhea is more likely to be caused by organisms introduced from without in bad milk than to any faulty digestion on the part of the baby.

III. INFECTIOUS DIARRHEA

In this disease we are dealing with a true infection of the intestinal mucosa, due to some specific organism, usually the dysentery bacillus, but occasionally the gas bacillus or streptococcus. Combined with infection of the mucosa, there may be also a certain amount of decomposition of the intestinal contents. The condition has been called by many names, but the term "infectious diarrhea" is the best one, as it serves to differentiate it from the fermentative group of diarrheas. Infectious diarrhea may arise in a number of ways, the most common one probably being direct infection of the mucosa by dysentery bacilli taken in per os. Or the process may in many cases start as a fermentative diarrhea, and for the first few days there may be no invasion of the mucosa. Then, if the organisms gain ascendance and are of the right variety, the mucosa is attacked, turning the fermentative diarrhea into one of the true infectious type. Occasionally a mechanical diarrhea, may change into an infectious, owing to the fact that the mechanical irritation of the intestine prepares the way and allows bacteria to invade the injured mucous membrane. There has been much discussion as to the organisms that cause infectious diarrhea, but the consensus of opinion seems to be that most cases are due to the dysentery bacillus. The streptococcus and the *Bacillus aerogenes-capsulatus* are also probably etiologic agents in some cases. Infectious diarrhea is a true epidemic disease, and is spread for the most part in the same way that typhoid fever is spread—by "fingers, food and flies."

In Boston, the epidemic usually starts the middle part of July, continues through August, and in especially hot summers into the first part of September. In the South it starts earlier, the last part of May and the month of June usually being the worst months. Young babies are by no means immune, but more cases of infectious diarrhea are seen in babies over 9 months old than in those under. The reverse is true for fermentative diarrhea. In fermentative diarrhea there is usually no demonstrable pathologic lesion of the intestine; in infectious diarrhea there may be a catarrhal inflammation of the mucosa of the ileum and colon, or innumerable small punched-out ulcers may be seen.

Symptoms.—The onset of infectious diarrhea is varied. It may be very sudden, and I have seen a case start with a convulsion and a temperature of 105, with no diarrheal symptoms until the next day. In most cases the onset is more gradual, however, and is first made known by diarrhea and moderate fever. There will usually be about eight or ten stools a day, but in some cases there may be as many as twenty or thirty. The stools may be very small, and often contain no fecal material, but consist merely of mucus, pus and blood. They are not usually offensive in character, and are more likely to be alkaline than acid in reaction, owing to the large amount of mucin they contain, which is a protein and decomposes rapidly. They practically always contain blood and pus intimately mixed with the mucus.

The condition varies a good deal in its severity; many patients do not have a temperature above 101, do not seem very sick, but still have many typical stools every day. Other patients will have extreme prostration, and may have a high temperature for a week or ten days. Nervous symptoms, such as twitching and retraction of the neck, are not uncommon, and are usually of bad prognostic significance. The body rapidly becomes drained of fluid on account of the diarrhea, and acidosis may develop, as shown by hyperpnea, in much the same way that it does in diarrhea of the fermentative type. In most cases gastric disturbance is not common, but occasionally there may be severe vomiting, which is very hard to deal with.

Diagnosis.—It is rare to have a case of infectious diarrhea without blood and pus in the stools, and for practical purposes this is the best way of distinguishing it from fermentative diarrhea. In the latter condition blood in the stools may be seen, but there is never much of it, and it never lasts for more than a day or two. Macroscopic pus is practically never seen in the stools in cases of fermentative diarrhea.

The temperature curve is also of considerable assistance in diagnosis. It may be high or low in either condition, but in fermentative diarrhea it rapidly drops as soon as the intestine is emptied and proper feeding instituted. In infectious diarrhea, on the other hand, the temperature is likely to continue elevated for several days, in spite of purgation and proper feeding.

Treatment.—The general treatment is the same as that for fermentative diarrhea, which has already been outlined. The principles of feeding, however, are quite different. As regards diet, cases of infectious diarrhea must be divided into two groups, for the feeding in the two groups is radically different. The first group includes cases caused by the dysentery bacillus or, more rarely, by the streptococcus. The second group of cases is caused by the gas bacillus.

As far as the symptoms and gross characteristics of the stools are concerned, it is impossible to tell into which group a given case falls. However, there is a simple stool test (see below) which serves to differentiate these groups. While the stool test is being made, or if for any reason it is not made, the case should be treated as a dysentery case, for this is by far the more common type. The therapeutic test is of some value, although rather haphazard, and if the child does not do well on the dysentery treatment, it should be changed to that for the gas bacillus. It is always best at the onset, however, to test the stools for the gas bacillus, as the test is simple and it gives much valuable information as to the proper feeding.

Technic of Gas Bacillus Test.—A U-shaped fermentation tube and a test tube are filled with concentrated nitric acid, and permitted to stand three minutes, when the nitric acid is poured out. Both tubes are rinsed thoroughly with tap water.

A small bit of stool, about a half teaspoonful of dextrimaltose, and about 15 c.c. of hot tap water are placed in the test tube, and the mixture is boiled vigorously for half a minute. The contents of the test tube are now poured into the fermentation tube, care being taken that it is filled up to the top, and that no air bubbles remain in it. The tube is plugged with flamed cotton, and keep in a warm place for twenty-four hours.

Gas in the top of the tube indicates that the gas bacillus is present, in greater or lesser numbers, depending on the amount of gas formed. If the gas bacillus is present in sufficient numbers to be the etiologic agent of the diarrhea, the tube will probably be "blown out," that is, entirely filled with gas.

Another simple way of testing for the gas bacillus is to plant a portion of stool in half a test tube of boiled milk and incubate twenty-four hours. If the gas bacillus is present the milk will be coagulated, will smell like rancid butter and will be shot full of holes like Swiss cheese.

If the "gas test" is negative, assume that the case is one of dysentery infection, and treat it as such.

FEEDING IN DYSENTERY CASES

The feeding in these cases is based on the fact that when offered protein food the dysentery bacillus grows very readily and produces large amounts of toxin. It does not thrive so well on carbohydrate food, nor does it produce so much or such deadly toxin. Therefore, a baby with dysentery should be fed on a low protein and a high carbohydrate food. This works well in practice, and is probably the most successful feeding known for dysentery patients. A few years ago it was the practice to starve patients with infectious diarrhea, and we used to feed many exclusively on weak barley water or lactose water for a week or ten days. Many of these patients died, probably as much from starvation as from the disease. According to our present ideas, a year old baby with dysentery would be treated about as follows: Following a purge, we give nothing but barley water for twenty-four hours. For the next twenty-four hours we add 8 per cent. lactose to the barley water. After this period a mixture of one fourth boiled skim-milk and three fourths barley water, with 8 per cent. lactose may be started. The skim-milk may be gradually increased each day, as the baby gets better, until he is taking undiluted boiled skim-milk with 8 per cent. lactose added. At about this time he should also be getting three or four tablespoonfuls of barley jelly a day. The skim-milk may be gradually replaced by whole milk, and the sugar should be reduced in quantity. During convalescence, fat should be increased very slowly, as nearly all babies after infectious diarrhea have a very poor fat tolerance. The sugars and starches should be most relied on.

It is quite likely that the baby will not digest all the food that is given him under this regimen, but he will come through the disease in much better condition than if he is starved, as he was in the former method of treatment. Another very successful method of treatment, which is similar in principle, and which has been used at the Floating Hospital in recent years with a good deal of success, is to feed the child on one-half fat-free lactic acid milk, and one half water, with lactose up to 8 per cent., the amount of lactic acid milk being gradually increased, and finally starches and fats being added. This method has the advantage that the lactic acid bacilli in the preparation may thrive to such an extent in the intestine that they will hamper the growth of the dysentery organisms.

The feeding in the "gas cases" is different, and patients with this form of infectious diarrhea always do better on lactic acid milk with a low sugar content than they do with any other feeding. The lactic acid bacillus seems to be directly antagonistic to the gas bacillus, and drives it out of the intestine very quickly. Furthermore, the relatively low carbohydrate and high protein content of lactic acid milk is indicated, as the gas bacillus is an organism which thrives on carbohydrate food, but does poorly on protein. Albumin milk, which has already been discussed, likewise fulfils all the indications for feeding in these cases.

PROPHYLAXIS OF DIARRHEAL DISEASES

No raw fruit or vegetables should be given to children under 5 years of age, and care should be taken that all food ingested be in a finely divided form. Overfeeding should be carefully avoided in hot weather, especially overfeeding with sugar. It is always good practice during a hot spell to dilute the baby's milk one third with water. Overclothing the baby is also to be avoided, and frequent bathing, avoidance of the sun, and providing him with water to drink between his feedings are all important. In the southern part of this country, during the summer, all milk fed to babies, no matter how clean it is, should be boiled. An ounce of orange juice daily will prevent scurvy.

In cooler parts of the country, during the hot weather, all milk should be boiled with the exception of certified milk, which can be given raw; but during very hot, sultry spells this should be boiled also.

There is really no valid argument against using boiled milk in the summer time. The only possible harm it can do is to produce scurvy. But we know that comparatively few babies who are fed on fresh boiled milk develop scurvy, and orange juice is practically certain as a prophylactic. Undoubtedly nature intended babies to have raw milk, but the dangers of unclean raw milk so greatly outweigh those of boiled milk, especially in the summer, that more and more physicians are ordering boiled milk as a routine, and it is the duty of us all to educate the laity as to the dangers of raw milk in hot weather.

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POSTINFLUENZAL PSYCHOSES*

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During the recent epidemic approximately 2,500 cases of influenza were treated in the Walter Reed General Hospital. In 435 of these cases pneumonia either had already developed before admittance to the hospital or was diagnosed here during the course of the influenza. The number of deaths from pneumonia was 226, making the death rate 52 per cent. This includes practically all deaths from influenza and gives a mortality rate of about 9 per cent. for all influenza cases admitted.

Delirium occurring during the height of the disease and clearing with the cessation of fever (fever delirium) was more frequent in the early part of the epidemic when the more severe cases were seen. The features of this delirium were in no way peculiar to influenza, but were such as mark a hallucinatory confusion arising in the course of any infectious disease. Cases of this sort are not considered in this report. Neurasthenic depression frequently persisted for a longer or shorter period after the subsidence of the acute symptoms. When this depression was not sufficiently deep to be considered as constituting a psychosis, and to need special treatment as such, the patient was not transferred to the psychiatric wards.

Of psychotic states persisting after the subsidence of the fever, and requiring special attention, there were only four in the 2,500 cases of influenza. Three of these four cases presented pronounced pneumonic consolidation.

During the epidemic or since, in addition to these four, sixteen cases have been admitted to the psychiatric wards in the causation of which influenza seemed to play a more or less important part. Keeping in mind the tendency to attribute to an influenzal infection everything out of the ordinary that happens during

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or following the epidemic, special care was taken to ascertain as definitely as possible that an influenza did exist or had existed. In our cases this was a comparatively easy matter since the fact of any illness would appear on the soldier's sick report. Recently a few cases have been admitted in which there was a history of influenza a month or more preceding the development of mental symptoms, during which interval the patient was in quite his normal condition. These cases are not considered in the present summary, nor is a case of frank delirium tremens running a typical course (second attack) and with only a vague history of a mild illness preceding it. Nor are definitely organic psychoses, coming to attention first at this time, considered as being due to the effects of influenza.

It is open to question as to how long after an influenzal attack that infection may be considered as an exciting cause in newly developing conditions. Since a new attack may occur within forty-eight hours, and the great majority of influenza patients are entirely well before the end of a month, we have assumed that if a soldier was sufficiently recovered to go back to duty and remain on duty for a month, the toxemia could be considered a thing of the past. Endogenous toxins liberated by the influenzal poison should show some effect before a month. In psychoses developing later than this there would be at least great doubt as to the etiologic importance of the infection. In none of our cases was the interval more than fourteen days.

The present report is intended to include only psychotic disturbances arising during the course of the infection and persisting for some time after convalescence, and those beginning during convalescence. The twenty cases which were selected as meeting these requirements had their onset as follows: During the febrile period: first week, 6; second week, 2; third week (pneumonia), 2; fourth week (pneumonia), 1; total, 11. During convalescence: first week, 5; second week, 4; total, 9. All were in soldiers (except one, a nurse) below 30 years of age, except two, who were 39 and 46 years old, respectively.

These cases fall quite readily into three groups: (1) Manic-depressive Group, eight cases; (2) Infective Psychosis Group, seven cases; (3) Dementia Praecox Group, five cases.

MANIC-DEPRESSIVE GROUP

Considering first the group in which the cases resembled most the manic-depressive picture, we find that three of the eight had their onset during the course of the influenza (fourth, fifth and tenth day) and that five came on during the first ten days of convalescence. In six there was a distinct hereditary factor and in two of these a history of prior attacks. One was mentally deficient. All were of the depressed type (except one nurse), began without disorientation, presented depression more or less deep, retardation, and self-accusatory ideas as the chief clinical features. Hallucinations of hearing occurred in only one and in that did not form an important part of the picture. The manic nurse ran the usual course of a mild mania until transferred at the end of a month to another hospital. Of the seven depressed cases five recovered in less than two months with complete insight, one is improving after two and a half months (mentally deficient), and one remains under treatment after four months. The following is a summary of the last mentioned case:

CASE 1.—A soldier, aged 30, whose father died from tuberculosis and mother from diabetes, and some of whose immediate relatives were said to be nervous, gave a history of a definite attack of depression in 1907 which resembled the present trouble. He contracted influenza Sept. 20, 1918, improved after six days, had a recrudescence of his temperature after four days which lasted seven days, at which time he had pulmonary findings suggesting tuberculosis but which later cleared up. Ten days after his fever subsided, about November 17, he became noticeably depressed, and worried about the people at home. He was retarded in thought and action. Two weeks later he was self-accusatory. He then continued without change until March 1, when he became more active but was still depressed. No hallucinations were apparent but he complained of unpleasant thoughts coming to his mind and of not being able to get rid of them. He thought a great deal about a skeleton. He worried about early sexual indiscretions. He said that when he was a boy he put his penis in his brother's mouth one night when the latter was asleep and that shortly afterward his brother died of typhoid fever. He now blames himself for his brother's death. After a duration of four months he appears more dull and is interested only in his own thoughts. He seems to appreciate that he is not right mentally.

Case 1 seems to form a connecting link with the praecox group. The quite definite history of a prior attack and the absence of hallucinations justify its being included in the manic-depressive group.

INFECTIVE PSYCHOSIS GROUP

In this group are included psychoses arising during the fever (and outlasting it) or at the termination of the fever. In none was there any important hereditary factor so far as could be learned. One case was in a constitutionally inferior individual of the inadequate personality type. One gave a history of a previous nervous attack. The chief symptoms consisted of more or less disorientation, sense falsifications (especially disagreeable voices), the mood was depressed rather than elated and restlessness was not a marked feature. The termination was by early recovery. The onset was on the second, third and fourth days in the uncomplicated cases, and on the twelfth, fourteenth, twenty-first and twenty-eighth days in the cases complicated by pneumonia (one antrum infection). The duration was as follows: Less than one month, two; less than two months, two; less than four months, three. In the four cases of short duration there was mental improvement in step with the physical improvement, and recovery was complete as regards insight, but there was not a clear memory of what had taken place at the height of the psychosis. Case 2 is an example:

CASE 2.—A soldier, aged 19, without known predisposition and no history of a prior attack of nervous or mental trouble, developed influenza, Sept. 30, 1918, the disease running a fairly severe course with bronchopneumonia. October 25, as his pulmonary condition was clearing up but while he was still in a run-down condition, he became depressed and disoriented. It was evident that he heard voices, though the exact content of these could not be ascertained. He accused himself of doing wrong and said that he was to be punished. He gradually improved physically, was less bothered by the accusations that he heard, and by the latter part of December was completely recovered. He appreciated that there had been something wrong with his mind, but he could not recall the details of the beginning and the height of his illness.

In other cases visual hallucinations with fear reaction were a prominent feature. One patient appeared to entirely lack insight on recovery, or at least he would never admit that there had been anything the matter with him. He was constitutionally inferior.

In the three cases of longer duration, four months, there developed after the delirium subsided, symptoms of a precox nature which made the diagnosis for a time uncertain. Summaries of these cases follow:

Case 3.—Student, S. A. T. C., aged 20, with no defective heredity and no history of prior psychotic attacks, developed influenza, Oct. 6, 1918. He was not seriously sick and improved sufficiently to go to work, October 14. Four days later he had a rise in temperature (antrum infection), became delirious, heard voices and saw strange things. November 2 he talked in a rambling way to himself of religious matters. When questioned, his replies were brief and irrelevant. He resisted examination and voided in bed. He was oriented approximately. In a week he grew less agitated and dropped religious subjects. He began having some trouble expressing himself and was decidedly sluggish in thinking and talking. He spent hours writing letters, scratching out and modifying what he had put down. The latter part of December he was in a catatonic state, refused to speak and had to be spoon fed, which condition alternated with unusual activity until February 1, from which time he improved steadily. He recovered, after four months' illness, with insight but with a defective memory for the early part and height of his illness.

Case 4.—A soldier, aged 24, without defective heredity or history of prior attacks, developed influenza, Sept. 24, 1918. On the fourth day of his sickness he began to hallucinate, heard voices say he was going to die, and saw a German digging a trench in which to bury him. He was poorly oriented. He improved quickly, but in the middle of December he still appeared somewhat confused and complained that he was unable to control his thoughts. He was restless, busied himself about nothing, was silly, laughing needlessly. He appreciated that things around him did not make the impression on him that they ordinarily would. There appeared to be a decreased flow of thought without definite blocking. At this time he did not hallucinate. He improved gradually and, Jan. 17, 1919, seemed perfectly well; he appreciated that his mental condition had been abnormal and he could recount many of the strange things that had happened to him.

Case 5.—A soldier, Italian, aged 23, no more emotional than the average of his race, developed influenza, Nov. 18, 1918. The next day he muttered incoherently when spoken to and seemed fearful. For the next six days he was more apprehensive and inaccessible, and had to be forcibly fed, evidently hallucinating. Negativism later became marked, and he lay in bed taking no interest in things around, and would not talk. He was not cleanly in his habits. He soon improved sufficiently to care for himself, but as late as the middle of January was still decidedly peculiar. He worried unnecessarily about his bodily functions, his talk was dissociated and meaningless, answers being often but vaguely related to the question asked. He gradually began to interest himself in things and by March 14 was active, interested, working, and his conduct seemed in all respects correct. He appreciated that he had not been just right, but he attributed his nervousness to the fact that since the influenza his bowels had not been in good condition.

Cases 3, 4 and 5 present sufficient praecox symptoms to connect them quite closely with the next, the dementia precox group.

DEMENTIA PRAECOX GROUP

Five of the cases, by reason of their most marked features, were considered as falling into this group. The onset in two was on the seventh and twenty-first days of the disease. In the three beginning during convalescence the onset was on the eighth day, after a sickness of fourteen days; twelfth day, after a sickness of sixteen days, and the fourteenth day, after a sickness of nine days. The duration at the present time is four, three and one-half, four and one-half, five, and four and one-half months, respectively. In none of the cases did heredity seem to be an important factor, nor was there a history of prior attacks. The onset was rather abrupt with more or less confusion. The mood was distinctly depressed and at times there was considerable apprehension caused by terrifying auditory and visual hallucinations. More or less distinct signs of blocking were present. Within two or three weeks the acute stage had passed and they have since pursued the usual hollow, inadequate course. Their reaction to messages by wireless, ideas of poisoning, accusations of being a German spy, bizarre sexual ideas, and feelings of bodily change is poor. They are now dull, lacking in interest, negativistic and promise to run the usual course of hebephronic dementia precox. In one case catatonic features were marked from the first but without any periods of excitement.

While these cases now seem to be clearly of the praecox type, their onset was not so different from that of the three infective cases that ran a long course (Cases 3, 4 and 5). One of the latter group was first called dementia praecox and one of the dementia praecox group was first called infective psychosis. Recent experience with praecox episodes following a definite adequate cause, as service with the A. E. F., would lead us to be in doubt as to whether in any individual case the condition will be permanent or whether ultimate (apparently) complete recovery might occur.

Considering the cases as a whole, predisposition did not seem to be a very important factor, only nine of the twenty showing defect of some sort either in the family or in the personal history. In only two of the eight manic-depressive cases did the family history seem to be entirely free from defect. Six had a history of nervous or mental trouble in immediate relatives and three of these had defective personal histories. Of the infective group two, these being cases of short duration, presented defective personal histories; heredity did not appear to be an important factor. In the five dementia praecox cases there was nothing in the family or in the personal history that could be considered as predisposing to mental trouble, except that in one case the father had become alcoholic late in life.

While the grouping of the cases may be said to be quite clear, there is distinct evidence of overlapping. Case 2, except for the initial disorientation, might have been considered as belonging to the depressed manic group. Cases 3, 4 and 5 presented praecox symptoms but recovered. The praecox cases in the beginning showed sufficient confusion to make the diagnosis for a time doubtful. In one depressed manic case (Case 1) praecox symptoms are beginning to appear. Disregarding the subdivision into groups and considering the series as a whole, the following gradations may be seen:

Depression; retardation; early recovery.
Depression; hallucinations; retardation; early recovery.
Depression; disorientation; hallucinations; early recovery.
Depression; disorientation; hallucinations; praecox symptoms; late recovery.
Depression; retardation; praecox symptoms; recovery doubtful.
Depression (+—); confusion (+—); hallucinations; praecox symptoms; no recovery.

Less marked than any of these is the simple neurasthenic depression that so frequently follows influenza. This would complete the gradations from a simple depression to a depressed hebephrenic praecox condi-

tion. Depression was by far the most common symptom, which seems to differ from the Boston Psychopathic Hospital experience[1] but is in accord with the view usually held.[2]

No individual case in the series presented anything that would mark it as being the result of influenza rather than of some other condition, but the mingling of symptoms resulted in a series that has features that seem to be rather characteristic of the postinfluenzal psychoses as we have seen them here. These features are: A foundation of depression with the superimposition of hallucinatory confusion and finally of schizophrenic symptoms.

SUMMARY

1. In an epidemic of influenza of average severity, occurring in soldiers who were for the most part between the ages of 20 and 30, only four of 2,500 cases treated at Walter Reed General Hospital developed psychoses of a severe type which outlasted the acute disease.

2. Twenty cases of postinfluenzal psychoses have, all told, been treated in the psychiatric wards of this hospital. They fall into three fairly distinct groups: Manic-depressive group, eight cases; infective psychosis group, seven cases; dementia praecox group, five cases.

3. Predisposition as shown by the family or the personal history was only marked in the manic-depressive group.

4. There is a sufficient overlapping of the groups to give, when considered as a series, a gradation from a simple depression to hebephrenic praecox of the depressed type. The chief characteristic of the series is: A foundation of depression on which develops sense falsifications, confusion and schizophrenic symptoms.

5. The occurrence of praecox symptoms is not a sure indication of permanency, but such cases run a longer course and recovery is less likely.

6. The most common symptom was depression. Hallucinations seemed to be entirely absent in seven cases.

Cincinnati Sanitarium, Cincinnati, Ohio.

1. Menninger, Karl A.: Psychoses Associated with Influenza, J. A. M. A. **72**: 235 (Jan. 25) 1919.
2. Jelliffe, Smith Ely: Nervous and Mental Disturbances of Influenza, New York M. J. **108**: 725, 755, 807 (Oct. 26, Nov. 2 and 9) 1918.

Killing the Louse.—The louse is an insect of filth. The greatest problem in the sterilization of clothes is to kill all lice and vermin and all disease germs without injury to the garments, and when to sterilization can be added cleansing then we have the best process of all. The sterilization may be by dry heat, steam, hot water, gas or chemical wash, according to the available supplies. Steam sterilization may be accomplished in an autoclave, a room, a car, a kettle, a barrel or a laundry washing machine, by the use of vacuum or at normal or increased pressure in a closed cylinder, or it may be applied as live or current steam. In the acutoclave or sterilization cylinder the complete process requires half an hour, but it was found recently that in a laundry washing machine cooties and nits can be killed with current steam in fifteen minutes; remove the garments, shake them out and wear them. Current steam does not shrink in fifteen minutes in the laundry wheel. But steam, in whatever form, although effective, does not cleanse the garments. The laundry processes are thoroughly efficient delousing processes and each step in the laundry formula can of itself be so regulated as to kill all lice. If very resistant spore bearing bacilli are suspected of being in the clothes, a live steam sterilization may precede the wash with no injury to the garments.—W. D. Pierce, *J. Econ. Ent.* **12**:46, 1919.

BLOOD TRANSFUSIONS WITHOUT A CHILL BY THE SYRINGE-CANNULA SYSTEM

TWO HUNDRED AND FOURTEEN CONSECUTIVE CASES

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During the past two or three years, several articles have appeared in the literature presenting one method or another of blood transfusion. In the presentation of such methods, naturally enough, claims of merit were made to justify the method used by the particular writer.

To one who may be inexperienced with blood transfusion, or who may not be familiar with the subject, such claims may be accepted without question. For this reason I deemed it timely to place on record the latest results obtained in transfusion of unmodified

Fig. 1.—*A*, distal end of cannula 2; *B*, distal end of cannula 3.

blood by the syringe cannula system. I trust future publications on methods of transfusion will refer to this article in making comparisons of methods.

The method as devised by me,[1] with only slight modifications, is as follows:

The entire apparatus consists of six syringes, two tourniquets, and two sets of cannulas.

CANNULAS

Two sets of cannulas are employed, one for the donor, the other for the recipient (Figs. 1 and 2).

There are three cannulas to each set (Fig. 2 *1, 2 and 3*). Each cannula telescopes within the other as shown in Figure 1.

The innermost cannula is practically a hollow needle, 2 6/16 inches long, 30-gage, with one end ground to a fine point and short bevel. The hollow needle (Fig. 2 *1*) is fitted snugly

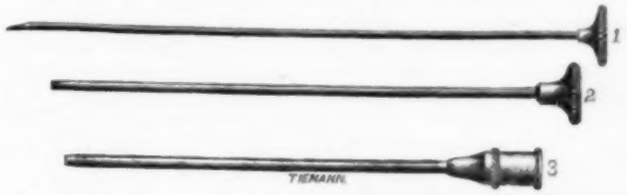

Fig. 2.—1, innermost cannula, or hollow needle; 2, middle cannula; 3, outer cannula.

into Cannula 2. Cannula 2 is 5 mm. shorter than the needle and is fitted snugly into Cannula 3. Cannula 3 is 5 mm. shorter than Cannula 2. The proximal ends of Cannulas 1 and 2 are capped with stationary thumbscrew caps. The proximal end of Cannula 3 is capped with a receiver to fit any Record syringe.

Cannula 3 is 2 inches long, 14-gage, 0.064 diameter. The caliber of this cannula is the same as the tip of a Record syringe.

In very small infants with very small veins only Cannulas 1 and 2 are employed, Cannula 2 being capped with the receiver to fit the tip of the syringe.

The syringes can be sterilized in 95 per cent. alcohol for a period of ten minutes and then rinsed in physiologic sodium chlorid solution to remove the alcohol.

1. Lindeman, E.: Simple Syringe Transfusion with Special Cannulas, Am. J. Dis. Child. **13**: 28 (July) 1913.

OPERATION

The patient and the donor are placed in recumbent posture in parallel position. The skin of the arms is sterilized. A small table is set between the patient and the donor. On this table are placed three basins containing sterile physiologic sodium chlorid solution approximately room temperature, for the washing of syringes. A nurse stands behind the table and washes the syringes by rinsing each syringe in each one of the three basins. As long as the last rinsing basin contains sterile normal salt solution, the other two may contain sterile tap or distilled water or salt solution. A syringe is never used a second time until washed in these basins, hence, no old or residual blood is allowed to enter the patient. These syringes are washed as rapidly as they are used. The third rinsing basin should remain clear throughout the operation.

One operator manages the syringe of the donor, the other operator that of the recipient. A tourniquet is placed on the arm of the patient to distend the vein. A cannula is then inserted into the vein by a skin puncture only.

INSERTION OF CANNULA

When the needle has entered the vein a drop of blood is seen to trickle from the distal end of the innermost cannula. After the first joint *A* has entered the vein, Cannula 1 is withdrawn about one-half inch, thus preventing the vessel wall from being punctured or injured by the needle after the vein is entered.

With the thumb now on the screw-cap of Cannula 2, the cannula is forced further until joint *B* has entered the vein. Cannula 2 is then withdrawn a distance of one-half inch, Cannula 3 alone now coming in contact with the vessel wall. The latter is then gently pushed into the vein to a desirable length, usually from three-quarters to one inch. The tourniquet is then removed.

A cannula is then inserted into the vein of the donor in a similar manner. The tourniquet is placed on the arm sufficiently tight to obstruct the venous return, but not tight enough to impede the arterial flow, and remains on the arm of the donor throughout the operation. Everything is now in readiness for transfusion. There is no need of haste at this stage.

The obturator in the cannula of the donor is removed and an empty syringe is promptly attached and blood is withdrawn as rapidly as possible. When the syringe is filled, the assistant replaces it by an empty syringe, at the same time placing the filled syringe on the table. The operator places his thumb over the mouth of cannula to prevent leakage during change in syringes.

The operator on the recipient picks up the filled syringe, attaches it to the cannula after removing the obturator, and evacuates the contents gently but speedily into the vein. As soon as the contents are evacuated a full syringe is again ready for evacuation. One syringeful of blood follows another in rapid succession until the desired quantity of blood has been transfused.

Small syringes of 20 c.c. capacity are found most satisfactory. Larger sizes are not used because it requires a longer time to fill and empty them. The time elapsing for the filling and emptying of one syringe is from six to ten seconds. It is practically impossible for any chemical or physical change to take place in that short space of time. Since the blood is transplanted in relay fashion, the entire mass of blood, regardless of the amount, is outside the body only so long as it takes to fill and empty one syringeful, namely, from six to ten seconds.

A little of the salt solution is squirted around the cannula occasionally to keep the field clean but none is injected into the vein of the patient.

ADVANTAGES OF THE METHOD

The blood passes through a minimum amount of foreign material. There is no blind system into which air may leak, and there are no rubber tubings, stopcocks or valves around which blood may clot. No anticoagulants and no foreign material are introduced into the patient. Herein lie the merits of this method.

In the method as originally outlined, a little of the salt solution was injected into the vein of the patient from time to time during the operation. This has been found unnecessary and during the past two years has been discontinued.

Before the publication of the syringe-cannula system of blood transfusion, I devised a variety of other methods, such as force-pumps, and gravity-pumps attached to intravenous cannulas by means of rubber tubing. I had also at that time, at the suggestion of Dr. Cyrus W. Field of New York, used sodium citrate to prevent the coagulation of the blood. These were all found inferior and were discarded by me in favor of the syringe-cannula system.

Since the publication of this method I have looked for possibilities for further improvement. I have continued experimenting for simplification, also realizing at the time that many others would attempt this. But I soon learned that further simplification was not attained without the sacrifice of important points of merit in the original method.

ESSENTIAL FACTORS

The important factors essential in the proper transplantation of blood are: (1) The method must be applicable in any case and in any disease. (2) It must be possible to transplant any amount necessary to obtain the most desirable clinical results. (3) The blood must be transplanted exactly as it exists in the donor, namely, in its natural state; to do this, (4) it must pass through a minimum amount of foreign material; (5) it must be out of the body of the donor and into that of the patient in a minimum length of time, and (6) it must be free of reactions.

REACTIONS

There are at least four causes for reactions to be recognized in blood transfusion: (1) hemolysis and agglutination; (2) toxic substances developed in the blood on remaining outside of the body; (3) chemicals such as anticoagulants and physiologic sodium chlorid solution, and (4) sensitization and anaphylaxis.

In the first 150 transfusions performed by me by the syringe-cannula system, a record of which has been published,[2] 33 per cent. were followed by chills and fever. In that series the preliminary hemolytic tests were made by many serologists in many parts of the country. At that time serologists, generally, were unfamiliar with these tests and the work was done rather crudely. The question I naturally asked myself was, Was the cause of these chills due to the method or was it due to inaccurate laboratory work in the selection of donors?

I then set myself to the task of supervising all hemolytic tests myself in order to rule out variations in the personal equation of laboratory workers.

I then published reports[3] on a series of 155 transfusions by the syringe-cannula system. Of this series the blood tests were personally supervised by me in 146 transfusions. Nine per cent. of these were followed by chills. In all, 136,800 c.c. of blood were transfused without a death referable to transfusion.

2. Lindeman, E.: Blood-Transfusion: Report on One Hundred and Thirty-Five Transfusions by the Syringe-Cannula Method, J. A. M. A. **62**: 993 (March 28) 1914.
3. Lindeman, E.: Reactions Following Blood Transfusion by the Syringe Cannula System, J. A. M. A. **66**: 624 (Feb. 26) 1916.

Adults received from 1,000 to 1,800 c.c. of blood in each operation.

I was much impressed by this marked improvement in the results obtained and concluded that chills in blood transfusion by the syringe-cannula system were the result of slight grades of hemolysis due to poor choice of a donor. Incidentally the technic was improved, so that it was no longer necessary to inject salt solution into the patient and the 9 per cent. of

TABLE 1.—BLOOD TRANSFUSIONS IN THIRTY-ONE CASES OF PERNICIOUS ANEMIA

Rise of Temp.	Amount of Blood Transfused											Total Transfusions
	1,000 C.c.	1,100 C.c.	1,200 C.c.	1,300 C.c.	1,400 C.c.	1,500 C.c.	1,600 C.c.	1,700 C.c.	1,800 C.c.	2,000 C.c.	2,200 C.c.	
No rise....	..	..	..	1	1	3	..	..	..	..	..	5
1 or less...	..	2	1	1	2	2	2	..	..	..	..	10
Under 2...	3	6	6	9	7	10	7	..	..	..	1	49
2 to 3.....	1	3	4	3	8	2	2	..	..	1	..	24
3 to 4.....	..	2	3	..	1	3	1	..	1	..	..	11
4 to 5.....	..	1	1	..	2	..	1	1	..	..	..	6
5 to 6.....	..	..	..	..	..	1	2	..	..	..	..	3
Totals..	4	14	15	14	21	21	15	1	1	1	1	108

chills were eliminated. The last series cited in the tables comprises 214 consecutive transfusions without a chill.

In order to make this demonstration obvious, transfusions of less than 1,000 c.c. are omitted in this series, and the sequence is disturbed by the absence of citation of cases receiving smaller amounts. The amounts transfused are shown in the accompanying tables. The tables represent two hundred and fourteen transfusions, in which 270,400 c.c. of blood were transfused.

The posttransfusion temperature is more often somewhat higher when amounts are transfused above 1,400 c.c. Some transfusions of large amounts show less rise of temperature than other transfusions of lesser amount. The rise of temperature usually begins from two to four hours after transfusion and begins to decline from four to eight hours afterward. In three cases a rise of temperature of from 5 to 6 degrees continued during a period of twenty-four hours after transfusion and then declined gradually until normal was reached three days later. One case had a delayed rise of temperature beginning almost twenty-four hours after transfusion and continuing for two days. During the period of fever of 3 degrees or more, patients will sometimes have a feeling of malaise and lack of appetite; at other times, exhilaration, restlessness and sleeplessness. When the temperature reaches normal, the full benefit of the transfusion is felt as a rule, and any symptoms incident to the procedure disappear. A transitory urticaria occasionally occurs but is apparently of little consequence. A transfusion at one time may be followed by an urticaria, yet at another time it may be absent in the same patient.

In four instances bronchospasm occurred, in two instances following the first transfusion, once in a case of leprosy and once in a patient who was asthmatic. The third instance occurred after the patient received his fifteenth transfusion, when 1,600 c.c. were transfused. The fourth instance occurred after the fourteenth transfusion, in which 1,500 c.c. were transfused. All of these cases were followed by only moderate rise of temperature and no chills. The third patient received three transfusions subsequent to his attack, with one recurrence and then only to a lesser degree. The fourth patient has had five transfusions since his attack of bronchospasm, without recurrence.

Of the 214 transfusions, there were 108 in pernicious anemia (Table 1). On some of these patients transfusion was performed from fifteen to twenty times. There was in 18.5 per cent. a posttransfusion rise of temperature of 3 degrees or more. The patient receiving 2,200 c.c. had a rise of less than 2 degrees and returned to his home, about 150 miles distant, thirty-six hours after receiving the transfusion, feeling well. There were twenty-six transfusions in cases of hemorrhage (Table 2). There was a rise of temperature of 3 degrees or more in 12 per cent. of these cases. One patient receiving 2,000 c.c. had a rise of temperature of less than 3 degrees. There were eighty transfusions in the miscellaneous group (Table 3). Of these 12.5 per cent. had a rise of temperature of 3 degrees or more.

The number of transfusions in the two latter groups (Tables 2 and 3) combined is the same as in the pernicious anemia group (Table 1), yet the pernicious anemia group shows a somewhat higher percentage of instances of posttransfusion temperature of 3 degrees or more. It should be noted that in the pernicious anemia group there were a greater number of instances in which patients received larger amounts of blood. I am inclined to believe that the larger amounts rather than the disease is responsible for the small increase in percentage. It is seen by the tables that by the syringe-cannula system blood may be transplanted with very near approach to the ideal. It may be transfused in any quantity and the very disagreeable and undesirable reactions many times following transfusion may be avoided.

RESULTS IN CITRATE METHOD

Recently the use of sodium citrate has come into favor of some. One need only refer to such articles as Novy and DeKruif,[4] Drinker and Brittingham[5] and the work of Clowes,[6] to appreciate the inferiority of the citrate method in comparison with that of unmodified blood. Even some of its most ardent supporters recognize the frequency of chills after citrate transfusion. At the outset attention should be called to the fact that in blood transfusion by the syringe-cannula

TABLE 2.—BLOOD TRANSFUSIONS IN FOURTEEN CASES OF HEMORRHAGE

Rise of Temp.	Amount of Blood Transfused											Total Transfusions
	1,000 C.c.	1,100 C.c.	1,200 C.c.	1,300 C.c.	1,400 C.c.	1,500 C.c.	1,600 C.c.	1,700 C.c.	1,800 C.c.	2,000 C.c.	2,200 C.c.	
No rise....	..	1	5	..	1	..	..	..	..	..	..	7
1 or less...	..	1	1	1	1	..	1	..	..	..	..	5
Under 2...	1	2	..	..	..	..	..	..	..	..	..	3
2 to 3.....	2	1	1	1	1	1	..	..	..	1	..	8
3 to 4.....	..	1	..	..	1	..	..	..	..	..	..	2
5 to 6.....	..	..	..	..	..	1	..	..	..	..	..	1
Totals..	3	6	7	2	4	2	1	..	..	1	..	26

system a given mass of blood is out of the body of the donor and into the patient before the same mass of blood by the citrate method even reaches the citrate solution.

Drinker and Brittingham[5] showed that when they introduced into a patient citrated blood from which the platelets had been separated, the percentage of chills was less than when the citrated blood with platelets was introduced. When they isolated the platelets from

4. Novy, F. G., and DeKruif, P. H.: Anaphylatoxin and Anaphylaxis, J. A. M. A. **68**: 1524 (May 26) 1917.

5. Drinker, C. K., and Brittingham, A. H.: The Cause of the Reaction Following Transfusion of Citrated Blood, Arch. Int. Med. **23**: 133 (Feb.) 1919.

6. Clowes, G. H. A.: J. Phys. Chem. **20**: 407, 1916.

citrated blood and introduced them into a patient they produced reactions. They conclude that when blood is citrated the platelets undergo some change and that this change in the platelets is responsible in a measure for the chills. They also demonstrated that mere addition of sodium citrate to red cell suspension increases the susceptibility to chills and these red cells also hemolyze more readily.

Clowes[8] has called attention to the similarity of sodium chlorid and sodium citrate and to their general effects on protoplasm. He showed that the difference between the salts is a function of the anion, and citrate is infinitely more toxic than the chlorid, no matter what the test material.

The clinical results of a single injection of sodium citrate into the circulation of an individual is by no means any proof of its harmlessness when added to blood outside of the body. In the first place, while injecting such citrate it is possible for the bodily mechanism to neutralize or convert it before any injury has been done to the blood itself. Secondly, when such chemicals are added to so labile a substance as blood and the blood is allowed to stand outside the body for from twenty minutes to one hour or several hours, a wholly different set of circumstances pertain. It may be here worth while quoting Novy and DeKruif[9] on the explanation of the production of anaphylatoxin. They believe the matrix of the poison anaphylatoxin is in the plasma and the serum. They say:

> The disturbance which brings about the transformation of the matrix into poison is readily affected by the addition of almost any alien substance to a serum. Thus bacteria, cells, organ extract, peptone, agar, starch, silicic acid, barium sulphate, diverse salts, even distilled water act as inducers or accelerators of this action. As to the mode of action of these substances, nothing definite can be said, but it is probable that a dispersion of the matrix precedes a tautomeric change.

Novy and DeKruif also showed that toxic substances develop in blood on standing for a period of three minutes. The reaction to this toxicity would be a mass reaction and would vary with the quantity introduced. A given patient may escape a severe reaction on a small quantity of citrated blood, say 500 or 600 c.c., but in many instances he would suffer a severe reaction if given a larger amount. The quantity of blood, therefore, that it is desirable or possible to introduce by the citrate method is necessarily limited to small amounts in order to remain within the limits of reasonable safety. Naturally sponsors for the citrate method would advocate a small transfusion in any condition regardless of the specific clinical demand because only small transfusions are possible by the citrate method.

It is therefore unfair to make comparisons of the incidence of chills following transfusions of citrated blood and those following transfusions with unmodified blood unless the amount transfused is taken into account. If comparisons are made in cases in which from 1,000 to 1,200 c.c. or more are transfused, the incidence of chills by the citrate method is very high and may be followed by death, and that by the syringe-cannula system, as shown by the tables, is absent.

The conclusion must follow that citrate of soda must produce changes in the blood, or allow by its use changes in the blood to develop, which produce chills and severe reactions. Furthermore, the inferiority of citrate transfusion is not only expressed by the incidence of chills and by the limitations of the amount it is possible to introduce into a given patient with safety, but is also expressed in the danger to patients of sensitization for subsequent transfusions, by the introduction of toxic substances into the patient. Toxic substances may produce chills and fever, and they may also cause sensitization. The subsequent introduction of toxic substances may produce bronchospasm, angioneurotic edema. The latter may become general and be followed by death. I have seen angioneurotic edema follow in two cases in patients who had previously received citrate transfusions, but in no instance has it followed in any case in which I transfused unmodified blood by the syringe-cannula system.

TABLE 3.—BLOOD TRANSFUSIONS IN MISCELLANEOUS CASES

Disease	Cases	Amounts Transfused					No. of Transfusions	Temperature Rise, Degrees					
		1,000 C.c.	1,100 C.c.	1,200 C.c.	1,300 C.c.	1,400 C.c.		No Rise	1 or Less	Under 2	2 to 3	3 to 4	4 to 5
Secondary anemia	8	..	5	5	1	..	11	1	1	3	2	3	1
Typhoid hemorrhage	1	..	..	1	..	..	1	..	1	..	..	..	..
Septicemia and anemia	2	..	..	1	..	..	3	2	1	..	..	..	..
Sepsis	5	3	4	1	..	..	8	1	3	..	4	..	..
Carcinoma and anemia	9	1	1	4	2	1	9	2	2	..	5	..	..
Carcinomatosis and anemia	2	..	..	1	1	..	2	1	..	..	..	..	1
Subacute nephritis and anemia	4	1	1	2	..	..	4	2	1	..	1	..	..
Tropical sprue and anemia	4	..	3	4	1	1	9	1	..	1	5	1	1
Abscessed liver	2	1	2	1	..	..	4	1	1	1	1	..	..
Postoperative gallbladder and hemorrhage	2	1	2	1	..	..	4	3	..	..	1	..	..
Banti's disease	3	1	2	1	..	2	6	2	..	1	3	..	..
Hemophilia	1	1	..	..	..	..	1	..	..	1	..	..	..
Cirrhosis of liver	1	..	1	..	..	..	1	..	..	..	1	..	..
Acquired hemolytic jaundice	1	..	1	..	..	..	1	1	..	..	..	..	..
Aleukemic leukemia	3	2	4	3	..	..	9	1	6	..	1	1	..
Acute pancreatitis	1	1	1	..	..	..	2	..	..	1	1	..	..
Pyloric stenosis	1	..	..	1	..	..	1	..	..	..	1	..	..
Tuberculosis	1	1	..	..	..	..	1	1	..	..	..	..	..
Leprosy	2	..	2	1	..	..	3	..	..	..	1	2	..
Totals	45	15	29	27	5	4	80	19	16	8	27	7	3

REPEATED TRANSFUSIONS

In diseases in which repeated transfusions are necessary, each transfusion should be done as nearly perfectly as possible to avoid disturbance of the labile elements in the blood and to avoid the sensitization of a patient to subsequent transfusions.

When one reflects on this subject and realizes the many factors that are involved in blood transfusion, namely, blood coagulation, platelet change, susceptibility of red blood cells to hemolysis, the danger of alien substances producing anaphylatoxin, anaphylaxis, tautomeric changes, the effect of chemical substances on the immunologic properties of blood, etc., it might impress itself on some that it would be worth while before doing transfusion work to pause a moment in

reflection on the best method for the transplantation of blood.

When one does such work only occasionally or rarely, the less one does of it, the better for the patient, and any method which meets the inexperience or limited technic of the operator is advisable. But when such work is done frequently, the operator should be encouraged to train himself to become equal to the best method that will make possible the closest approach to perfect transplantation. To do this I believe the method must embody the following qualifications: (1) The blood must be out of the body a minimum length of time; (2) it must pass through a minimum amount of foreign material; (3) anticoagulants must be avoided; (4) no foreign material, not even physiologic sodium chlorid solution, should be introduced; (5) it must be applicable in any case and in any disease, and (6) it must be possible to transfuse in any amount with a minimum reaction.

Blood transfusion is a life-saving measure and one that will frequently yield brilliant results in the hands of the skilled and failure in the hands of the inexperienced. It is especially in diseases other than hemorrhage, when there is much disease for the patient to overcome after he has received the most effective transfusion obtainable, that work of high excellence is of paramount importance.

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PREGNANCY COMPLICATED BY EPIDEMIC INFLUENZA

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Influenza and pneumonia are, without any question, extremely grave complications of the pregnant state. Until the recent outbreak of epidemic influenza, however, there seems to have been either little opportunity or no great effort to study any number of such cases appearing in groups in which the infective organism, seasonal conditions and general treatment were similar. Following the epidemic of 1889-1890 a few articles appeared in various European journals, but the opinions and findings of the different writers were not especially convincing nor were they by any means uniform. Most of the articles were published long after the epidemic was past and interest had died down, so that they were merely of historical value and the lesson in them was lost. Consequently, with the outbreak of the recent epidemic we were quite unprepared for the appalling loss of life among pregnant women affected by this disease. Hintze,[1] Vinay,[2] Ballantyne,[3] and Amann[4] studied the effects of the epidemic of 1889-1890 and published their results, but for the most part their conclusions were inconclusive, while a review of their work leaves many points unexplained and considerable doubt as to just what course should be pursued in the care and treatment of any given patient or number of patients.

RELATION OF PNEUMONIA TO EPIDEMIC INFLUENZA

We have made an analysis of fifty cases of pregnancy complicated by epidemic influenza and believe the study to be of value, not only from the standpoint of interest in the present epidemic, but also in its relation to ordinary pneumonia during pregnancy. The generally accepted idea regarding this disease has been followed in that we have made no attempt to differentiate between those cases which did and those which did not show pneumonic lesions, classifying them all under the heading of epidemic influenza. Clearly many of the lessons to be learned from this epidemic can be applied to the more usual types of pneumonia. That there is a need for such application is demonstrated by the discussion of the recent work of Bland[5] on such a self-evident point as the effect of abortion or premature labor on the course of the disease. Bland showed that 75.5 per cent. of the women in whom the disease was fatal died after their pregnancy was interrupted, but Arnold,[6] in discussing his paper, stated that abortion or miscarriage was not to be feared but welcomed, and considered artificial termination of pregnancy advisable in order to lessen the toxemia of the patient. Farrar[7] and Kosmak[8] both believe that abortion has little or no influence on the course of the disease, although Kosmak thinks that induction of labor should not be undertaken, because labor at this time is simply an added burden for the patient to carry.

In our series, several peculiar features stand out with especial prominence, and we wish to emphasize these, at the same time endeavoring to explain them, hoping that something of value in the way of treatment may be gained thereby. It was evident from the outset that it was a serious matter for a pregnant woman to develop epidemic influenza; it soon was learned that a large proportion of these women miscarried, or fell into labor, prematurely or otherwise, as a direct result of the infection, and the mortality, high enough without this occurrence, was thereby increased to a shocking degree. We have known this more or less vaguely from the usually tragic course of pneumonia during pregnancy as seen in routine practice. The epidemic of influenza, however, acted like a veritable plague, carrying off pregnant women as it did no other class of people.

EFFECT OF INFLUENZA ON PREGNANT WOMEN

Among the fifty patients, an interruption of pregnancy as a direct result of the infection took place in twenty-one, or 42 per cent. Seventeen of these women died, and only four recovered. This is a mortality of 80.9 per cent. in case the patient delivers herself or miscarries, and may be compared to the incidence of death in the group of twenty-nine women whose pregnancy was undisturbed. Fourteen, or 48.2 per cent. of these died undelivered, whereas the remaining 51.8 per cent. recovered without any apparent effect on their pregnancy.

In recapitulation, our figures may be expressed in three ways, namely, 48.2 per cent. mortality resulted

1. Hintze: Diskussion über den Einfluss der Influenza auf Schwangere, Zentralbl. f. Gynäk. **51**, 1896.
2. Vinay: De l'influenza chez les femmes en état de puerpéralité, Lyon méd. **69**: 247, 1892.
3. Ballantyne: The Relation of Influenza to Obstetrical Cases, Obst. Tr., Edinborough **19**: 33, 1894.
4. Amann: Studien über Influenza bei Schwangeren, München. med. Wchnschr. **37**: 162, 1890.
5. Bland: Influenza in Its Relation to Pregnancy and Labor, Am. J. Obst. **79**: 184, 1919.
6. Arnold: Discussion, Am. J. Obst. **79**: 304, 1919.
7. Farrar: The Visitations of Influenza and Its Influence on Gynecologic and Obstetric Conditions, Am. J. Obst. **79**: 229, 1919.
8. Kosmak: The Occurrence of Epidemic Influenza in Pregnancy, Am. J. Obst. **79**: 238, 1919.

under the best possible circumstances, that is, without disturbance of the pregnancy; 80.9 per cent. if the disease interrupts the pregnancy, or an average risk to a pregnant woman from epidemic influenza of 62 per cent. (thirty-one deaths among fifty patients).

During the epidemic 950 patients with influenza were admitted to the Western Pennsylvania Hospital of Pittsburgh. The mortality among these patients was 22.31 per cent., which is somewhat lower than that reported by Keeton and Cushman[9] of the Cook County Hospital in Chicago, where there was a death rate of 39.3 per cent. among 1,735 patients. Although their total mortality was higher than that of the Western Pennsylvania Hospital, the death rate among pregnant women in the same institution was lower than ours. This was reported by Woolston and Conley[10] as being 51.4 per cent.

In studying the total mortality at the Western Pennsylvania Hospital, it was noted that the incidence of death was higher (24.84 per cent.) among nonpregnant women than among men (19.1 per cent), but the 62 per cent. death rate among pregnant women is still two and one-half times greater than that of other women.

Table 2 demonstrates the facts already stated, that a pregnant woman who contracts epidemic influenza

TABLE 1.—MORTALITY IN INFLUENZA *

	Mortality at West. Penn. Hospital, Per Cent.	Mortality at Cook County Hospital, Per Cent.
All cases	22.31	39.3
Pregnant women	62.0	51.4

* A few of our cases occurred in the obstetric service (Dr. Titus) of the St. Margaret Hospital, Pittsburgh. The treatment having been identical, they are included.

is liable to have her pregnancy interrupted by the disease, and that if this does happen her chances for recovery are seriously impaired.

EXPLANATION OF INTERRUPTION OF PREGNANCY AND ITS EFFECT

In seeking an explanation of these two points, observers have advanced several theories. Woolston and Conley[10] believe that the toxemia which exists is largely responsible for the frequency with which pregnancy is interrupted, and refer to the lack of proper oxygenation of the blood as a causative factor. They note that a very great majority of abortions or premature labors occurred within twenty-four hours of death, at which time patients were extremely toxic, and reason therefore that the imminence of death is a cause rather than an effect of the abortion or premature labor. We do not quite agree with this, because we believe that the toxemia acts entirely in an indirect way in interrupting a pregnancy, and that death is hastened by this occurrence.

Among our patients, fourteen women died undelivered, all necessarily "toxic," as compared to seventeen, only three more, who aborted or delivered and then died. Toxemia should be considered only as a factor in the production of uterine contractions, else there would have been more deliveries among the fatal cases. At least the term is too general and its use does not explain the manner in which a toxemia actually affects pregnancy. Every one is familiar with certain ordinary toxemias of pregnancy, none of which cause premature labor, except indirectly. For instance, preeclamptic toxemia seldom causes labor to begin unless the fetus dies. Many women commence to have labor pains during a series of eclamptic convulsions, but that is due in all likelihood to the violence of the convulsive seizures in conjunction with the death of the fetus, which thus becomes a foreign body within the uterus. Toxemia alone, therefore, cannot be said to produce premature labor.

TABLE 2.—INTERRUPTION OF PREGNANCY AND RESULTS

		Month of Pregnancy									Mortality Per Cent.
		2	3	4	5	6	7	8	9	Total	
Recovered	Interrupted	0	1	0	0	0	0	0	3	4	....
	Uninterrupted	0	0	2	2	3	4	3	1	15	....
Died	Interrupted	0	0	2	1	5	1	1	7	17	80.9
	Uninterrupted	1	0	1	3	3	4	0	2	14	48.2
Total		1	1	5	6	11	9	4	13	50	62.0

It naturally requires little impulse, in a comparative way, to start a woman near term into labor, and if one accepts the theory of Brown-Séquard[11] that an excess of carbon dioxid and a lack of oxygen in the blood leads to energetic uterine contractions, we have a ready explanation of the labors at or near maturity. Nine babies from these labors survived; one died. There seemed to be a tendency, however, for pregnancy to be interrupted no matter what the period of gestation (Table 2). In the earlier months, something more is required, and it seemed logical to conclude that here was a combination of factors, such as deoxygenation of the blood, and increase in carbon dioxid to such a degree that it and the toxemia of the mother brought about the death of the fetus, which immediately acts as a foreign body within the uterus and, setting up contractions, is presently extruded.

The fact that Table 3 shows that ten of eleven premature infants were born dead, as compared to only one baby in ten at full term, would indicate that it is almost necessary to kill the fetus by deoxygenation and toxemia in order to interrupt the gestation in the earlier months.

TABLE 3.—CONDITION OF INFANTS

	At or Near Term	Premature
Born alive	9	1
Died	0	1 (22 hrs.)
Survived	9	0
Born dead	1	10
Recent	1	8
Macerated	0	2

This idea is further borne out by the fact that most of the patients who had premature labors or miscarriages induced by the infection died within from twelve to twenty-four hours after delivery (average time approximately twenty hours), whereas following labor at or near full term death occurred at any time from two to twenty-one days (average time eight days). Evidently, therefore, a patient must be more seriously ill to start a miscarriage than to start labor at term. We reason thus because death followed more promptly

9. Keeton, R. W., and Cushman, A. Beulah: The Influenza Epidemic in Chicago, J. A. M. A. **71**: 1962 (Dec. 14) 1918.
10. Woolston, W. J., and Conley, D. O.: Epidemic Pneumonia in Pregnancy, J. A. M. A. **71**: 1898 (Dec. 7) 1918.
11. Brown-Séquard: Experimental Researches Applied to Physiology and Pathology, 1853, p. 117, quoted by Williams: Obstetrics, 1917, p. 237.

in that group of cases in which the actual amount of work and shock incident to labor naturally would be least. In fact, the abortions, miscarriages and the earliest of the premature labors were apparently easy for the patient. Of course, many of the women were so toxic that they may have been indifferent to the pain.

EFFECT OF INTERRUPTION OF PREGNANCY

Interruption of pregnancy at any period is serious, but it is less serious at term, because less toxemia and deoxygenation of the blood is required in order to bring on labor at this time. Because this patient is not necessarily so seriously ill as one of the other group, her chances for recovery should be slightly better. Table 2 shows this to be true. It will be noted that ten patients delivered before the ninth month died, while only one recovered; whereas only seven died following delivery at term, while three recovered. Just why so many as fourteen women died undelivered can be explained only by saying that in them the disease advanced so rapidly that it outstripped the more laborious process of the induction of abortion or labor. By this we mean literally that it is a time-consuming process to get ready for even the beginning of a labor or abortion to say nothing of the time which is later involved in the completion of the labor after it is once begun. Labor had begun in only one of the fourteen patients who died undelivered.

The next question which arose was why the mortality should be so great and death so sudden when an interruption of pregnancy takes place. As pointed out above, the 48.2 per cent. mortality in pregnant women is increased to 80.9 per cent. by the mere occurrence of a miscarriage or an easy labor. We have argued, it is true, that the more seriously ill a woman is the more likely, as a result of this, is she to have her pregnancy interrupted, and this might appear to dispose of the question. That would be so were it not a matter of comparison. The more profoundly sick a woman is, the more certainly and the sooner will she miscarry or go into labor; but no matter how light any given woman's illness might be, if she has her pregnancy interrupted by the disease the outlook for her immediately becomes more grave. We had gained the impression, later borne out by our figures, that of two women equally ill, the one whose pregnancy remained undisturbed possessed a likelihood of recovery several times as great as that of the woman whose pregnancy was interrupted. This impression was due to the fact that practically all of the former who died were seriously ill on admission to the hospital, whereas many of those in the latter group seemed to be in fairly good condition until the moment when their pregnancy came to an end. From that instant their general condition became steadily and rapidly worse. The internist in consultation in several of the latter cases gave the opinion that "there was not enough pneumonia present to kill this woman," or "from a medical standpoint her condition was quite good." Almost invariably, however, the ending of their pregnancy was marked by a distinct change for the worse, usually followed by death.

The explanation of this seems to be that labor or even miscarriage is accompanied by a certain amount of shock, and on delivery there is a sudden lowering of intra-abdominal pressure, especially if pregnancy is at all advanced. The muscular effort of labor increases the carbon dioxid content of the blood, already overloaded through the deficiencies of the respiratory tract; the myocardium is weakened by the disease, then strained by the muscular exertion of labor, after which blood pressure is suddenly reduced by the cessation of labor and the hemorrhage accompanying delivery.

This matter of hemorrhage is probably a most important factor. Venesection, while theoretically advisable in ordinary pneumonia, has been shown to be actually harmful to patients with epidemic influenza. The cyanosis of these patients is more a dusky pallor than a blueness. Circulation is undoubtedly impaired, and we found that the lower the blood pressure the worse the prognosis. Patients who recovered maintained a fair blood pressure, whereas those who died either started out with or soon developed a low blood pressure. As patients began to recover blood pressure increased. Venesection in these cases is illogical, therefore, and the loss of blood accompanying delivery or miscarriage undoubtedly has a deleterious effect on these women.

AGE OF PATIENTS

It may be of passing interest to speak of the ages of the patients studied in this series. As our youngest patient was 17 years old and our oldest 37, we divided them into two groups, each of ten years. There were twenty-nine women from 17 to 27 years of age. Ten, or 34.5 per cent., of these recovered, as compared to nineteen, or 65.5 per cent., who died. In the group whose ages ranged from 28 to 37, there were eighteen women, of whom ten, or 55.5 per cent., recovered, while eight, or 44.5 per cent., died.

The practical points to be gained from this study may best be outlined in a summary.

SUMMARY

1. The recent outbreak of epidemic influenza offered an opportunity for the study of numbers of pregnant women attacked by the disease.

2. Pneumonia and epidemic influenza complicating pregnancy have so many features in common that a study of the latter is of value, for its application not only to future epidemics, but also to the management of ordinary pneumonia as seen from time to time in pregnant women.

3. The mortality from epidemic influenza in pregnant women is much greater than in nonpregnant women.

4. Epidemic influenza caused abortion, miscarriage or premature labor in approximately 42 per cent. of the patients in this series.

5. The outcome of the case depends largely on the effect of the disease on the pregnancy, as evidenced by the fact that the mortality among pregnant women, high enough under the best possible circumstances (48.2 per cent. without interruption of the pregnancy), was markedly increased (80.9 per cent.) by the occurrence of abortion, miscarriage or premature labor.

6. The mechanism by which the disease disturbs the pregnancy seems to be a combination of factors such as deoxygenation of the blood, excessive accumulation of carbon dioxid in the blood, and a degree of toxemia sufficient to cause the death of the fetus. In the later months, the first two conditions may be sufficient to start labor, but in the earlier months it usually requires the additional condition of a dead fetus acting as a foreign body to initiate uterine contractions.

7. The ill effect of abortion or labor on the course of the disease may be explained on the following grounds: (*a*) muscular exertion increasing the already

excessive amount of carbon dioxid in the blood, and further straining the already weakened myocardium; (*b*) sudden release of intra-abdominal pressure by the extrusion of the fetus in an advanced pregnancy; (*c*) sudden reduction of blood pressure by hemorrhage incident to labor; (*d*) lessened resistance to the ordinary shock of labor and delivery.

8. The treatment should be primarily prophylactic, pregnant women being urged to avoid all possible exposure to cases of influenza or pneumonia or even common colds. In case of infection the patient should have absolute rest, fresh air (out of doors if possible), early stimulation, free elimination, avoidance of violent purging and quinin, sedatives as required, and in case labor or miscarriage comes on, early interference in order to relieve her as much as possible of the strain of the second stage. To this end forceps delivery is advised, as soon as the cervix is dilated, since the abdominal as well as the uterine muscles are in action in the second stage and the exertion, therefore, greater. Anesthesia is, of course, contraindicated and not required, because the patients are usually so toxic as to be indifferent to the pain whether the delivery be instrumental or spontaneous. Prompt measures against hemorrhage, such as uterine pack, should be instituted. Hypodermoclysis of physiologic sodium chlorid solution is frequently used and is probably preferable to intravenous injection, because the circulatory system must not only not be overloaded, but also not too suddenly strained.

ABDOMINAL PREGNANCY CONTINUING FOUR MONTHS AFTER UTERINE PERFORATION

OPERATION AND RECOVERY

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The unusual course and findings of this case, and its extreme rarity, warrant the careful, detailed report.

REPORT OF CASE

History.—Mrs. L. S., aged 25, married five years, began menstruating at the age of 14. The first child, born in 1915, was a forceps case and died in one week from cerebral hemorrhage. The second child, born in 1916, is living and well. From the time this second child was 10 months old, the mother had menstruated regularly up to the early part of December, 1918. The latter part of December, two weeks following her menstrual period, her husband died of influenzal pneumonia, and when she failed to menstruate in January, she went to a midwife, who introduced a soft rubber catheter into the uterine cavity, where it remained for two days. One week later this was repeated and she then bled for three days. Two weeks after abortion she entered the Bellevue Hospital, New York, because of abdominal cramps and epigastric pressure, and remained there one week. She refused to have curettage performed and left the hospital. In March she came to Chicago and at the end of the month entered the Michael Reese Hospital, where she remained three days under observation. She left the hospital and went to work in a tailor shop. In both hospitals she denied any abortive measures had been attempted and gave misleading statements. During January, February and March, at her regular menstrual periods, she flowed for two or three days, but the flow was dark and foul smelling. The last period was March 18, 1919. April 14, while at work, she experienced a sharp pain in the region of the rectum, became dizzy, felt her heart pounding furiously and everything before her eyes turned black. She did not, however, lose consciousness. This was about 2:30 p. m. She was taken home and I saw her at 5 p. m. the same day.

Examination.—A young, well-nourished woman was lying in bed complaining of cramps and slight nausea. There was a slight pallor about the face. The temperature was 98.4; pulse 90 and of good quality. Because of the thickness of the abdominal wall and the extreme irritability of the patient, a satisfactory abdominal examination could not be made. However, there was no marked tenderness or rigidity. Vaginal examination disclosed a firm cervix with lateral lacerations. No tenderness or bulging in the vaginal fornices could be detected. The uterus could not be distinctly outlined. From the history obtained and the symptoms present, I advised her to enter the hospital, where an examination under ether could be made and the course to be taken decided on.

April 14, the patient entered the Wesley Memorial Hospital. April 15, the patient having been prepared for operation and anesthetized, bimanual examination showed the uterus slightly enlarged and freely movable. No masses were present at either side of the uterus. A uterine probe introduced into the uterine cavity encountered no resistance and slipped in up to the handle. A diagnosis of uterine perforation was made.

Operation.—A median incision was made from below the umbilicus to the symphysis, and on opening the peritoneal cavity, the entire area was filled with dark blood-clots. After removal of a large amount of clots and sponging out a quantity of dark fluid, the examining hand brought up a fetus from among the small bowels. From the development and size, the fetus was about five months old. The cord extended from the fetus to the uterus. The woman was placed in the Trendelenberg position and the uterus brought to view. A most interesting condition presented. The uterus was only slightly larger than the nonpregnant multiparous uterus, firm in consistency and at the fundus was attached a smooth, necrotic mass, the size of a small orange. There was a transverse tear at the junction of this mass with the fundus anteriorly. Protruding from this opening were tissues which were easily recognized as the placenta and its membranes, and into this opening extended the umbilical cord to its attachment.

Examination of the tubes and ovaries showed these structures normal. A supravaginal hysterectomy was decided on. The uterus was removed but the tubes and ovaries were left in situ. The cervical stump was covered with peritoneum and the two broad ligaments were sewed together, forming a broad firm support for the cervical stump and the vaginal vault. The abdomen was closed without drainage. On leaving the operating room the patient's pulse was 160. The foot of the bed was elevated and physiologic sodium chlorid solution was given per rectum, with the result that a few hours later the pulse was 100. By the fourth day the pulse returned to normal and remained so. There was an elevation of temperature for the first few days, the maximum reached being 101. The course from the fourth day on was uneventful and the woman left the hospital, April 28, thirteen days after the operation, feeling perfectly well.

Further examination of the specimen revealed a small perforation which connected the uterine cavity with the overlying necrotic mass. The perforation was a little to the right of the median line of the fundus. The mass over the fundus was friable and appeared to be organized fibrin and blood. This was completely filled with placental tissue. The placenta extended over the margin of the perforation and was attached for a short distance to the endometrium. Except for the point of perforation, there was a firm muscular wall between the uterine cavity and the placental mass on the fundus. The capacity of the uterine cavity was about two drams.

COMMENT

In view of the history obtained and the condition found at operation, what probably occurred was as follows: At about four weeks' pregnancy the catheters introduced either perforated the fundus or caused a local necrosis followed by perforation, with the expulsion of the products of conception into the peritoneal cavity. A portion of the placenta, sufficient to keep the fetus viable, retained its attachment to the endometrium. The rest protruded from the perforation and by partially filling up this opening no doubt controlled to some extent the hemorrhage which must have taken place, and so saved the woman from death from internal hemorrhage. However, there must have been a slow, continuous bleeding for the large amount of blood found in the peritoneal cavity and the absence of any severe shock would so indicate.

Uterus, placental mass and fetus.

The fetus and the greater part of the placenta lying extra-uterine became, in time, covered by a fibrinous deposit, which formed the false sac found at operation. The day preceding the operation this sac ruptured, giving rise to the symptoms then complained of and expelled the fetus into the peritoneal cavity. The size of the uterine cavity as compared with the size of the fetus definitely shows that for a period of about four months the fetus remained viable in the peritoneal cavity.

A careful search of the literature reveals only two cases of this type. Henrotin[1] reports a case in which perforation occurred at two months and in which operation was done a month and a half later. In this case the fetus contained in the sac was extra-uterine but the placenta was wholly within the uterine cavity. Leopold[2] reported a case from his clinic in which rupture of the uterus took place in the fourth month as result of a fall and pregnancy continued to term in the peritoneal cavity. Perforations in the course of a curettage or in attempted criminal abortions are not infrequent. No doubt some remain unrecognized.

Aside from the very unusual complication which I have reported, the literature abounds with reports of complications such as: prolapse of bowel through perforation, internal hemorrhage, peritonitis, sepsis, uterovesical and uterorectal fistula. Rupture of the uterus during labor is also encountered, especially through the scar of a previous cesarean operation.

In the vast majority of cases the symptoms are so prominent as to be recognized at once, and it has been estimated that in all cases, treated by operation and expectantly, there is a mortality of approximately 25 per cent.

30 North Michigan Boulevard.

1. Henrotin: Practice of Obstetrics of American Authors, 1899.
2. Leopold: Arch. f. Gynäk., 1896.

AN EXTRACARDIAL MURMUR OF UNUSUAL ORIGIN

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Extracardial murmurs, in cases of chest injury, are sufficiently uncommon to warrant the report of the case of Private A. F., returned from overseas for discharge. A search in the literature has failed to reveal similar observations, although doubtless there may have been many, since Col. Warfield T. Longcope, in a personal communication, writes that he "heard of several while abroad."

Private A. F. suffered a shrapnel wound in the left chest posteriorly, Sept. 24, 1918, at Verdun. The piece of shrapnel entered the chest just below the angle of the left scapula. He was taken to a hospital, where bloody fluid was aspirated from the left chest, and on removal to a second hospital, Sept. 29, 1918, another aspiration was made; the patient was then evacuated to a third hospital, October 12, where the following note was recorded: "Left hemothorax filling almost entire cavity; heart markedly displaced to right; foreign body under left clavicle." October 21, "a portion of the sixth rib was resected in the axilla; the pleura was opened, bloody fluid drained out; adhesions were found all about the lung; a very heavy one above and behind. These were freed and the lung expanded well; the rib sutured in place; incision closed." A small piece of shrapnel was removed at this operation. October 31, the stitches were removed and the wound was found healed. It was noted that the lung expanded well and that there was still some fluid in the left chest. November 9, the left chest was aspirated and a few cubic centimeters of bloody fluid were removed. The lung expanded well; it was noted that a partial pneumothorax was present. November 16, the patient was classified "D" and then returned to the United States.

Fig. 1.—Anterior-posterior view of the chest: The foreign body can be seen just above the upper border of the third rib near the sternal line.

REPORT OF CASE

History.—The father, mother, two brothers, and one sister were living and well. No cancer or tuberculosis was present in the family. The patient had previously enjoyed good health. There had been no discomfort on exertion, and in the numerous physical examinations made before and during

training, no cardiac abnormality had been noted. The patient walked into the hospital, apparently in normal health and without any complaint.

Physical Examination.—The patient was a well developed and well nourished man of 26, walking and exercising without fatigue or dyspnea. His pulse rate was 80 in the dorsal position—regular, rhythmic and equal. The left chest was somewhat less full, and the left costal border lagged. Three scars were visible—the first just below the angle of the left

Fig. 2.—Lateral view of the chest: The fragment can be seen at the level of the fifth thoracic vertebra, just to the left of the body, near the pedicle.

scapula, 2 cm. long; the second just above the outer third of the left clavicle, 1 cm. long, barely visible; the third, an operative scar, followed the left fifth rib from the midaxillary to the mammillary line. The fremitus over the left chest laterally and posteriorly was less than on the right side; the percussion note over the left chest in the axilla and below the scapula was impaired. The breath sounds were somewhat distant over the left back, but no evidences of moisture were found. The physical signs were believed to be those of a moderately thickened pleura.

Heart: The point of maximum impulse was in the fifth interspace, 8.5 cm. to the left of the midsternal line. The cardiac borders were as follows: The right cardiac border was 2.5 cm. from the midsternal line at the second, third, fourth and fifth costal interspaces; the left cardiac border was 2 cm. from the midsternal line at the second costal interspace, 6 cm. at the third, 8.5 cm. at the fourth and 8.5 cm. at the fifth interspace. The heart sounds were normal; a loud murmur, metallic in quality, was heard best over the third rib 6 cm. to the left of the midsternal line. This murmur, like the sound produced by the striking of cymbals, began in systole and faded away in diastole. It had one point of maximum intensity, although it could be heard over the entire left chest anteriorly and laterally. The murmur was heard faintly in the back, but was not transmitted to the vessels of the neck. It was equally intense in the various bodily positions, but when the arms were elevated vertically it faded out, and as gradually reappeared when the arms were lowered. This disappearance and the recurrence were noted on several examinations. Respiration did not change its character, but exercise intensified it. The reaction to exercise was within normal limits; the pulse rate dorsal was 80; standing, 80; after 100 hops, 100; two minutes later, 72.

Roentgenographic Report: "Metallic body about 2.5 cm. long and 0.5 cm. wide, apparently a shrapnel fragment, lodged in the chest at the level of the fifth thoracic vertebra, just to the left of the body near the origin of the pedicle." (R. Shoemaker 3d, First Lieut., M. C.)

COMMENT

An extracardiac murmur was evident in this case of chest injury caused by shrapnel. The murmur was dependent on cardiac systole and independent of respiration. It was distinctly separate from the cardiac sounds. It was not affected by change of bodily position except on elevating the arms, when the murmur faded out, to reappear on lowering them. The aorta rises to the level of the fourth thoracic vertebra, curving to the left of the fifth thoracic, so that the murmur may have been caused by the vibration of the scar tissue adjacent to the piece of shrapnel. Whether or not the murmur was due to the vibration of connective tissue with the foreign body acting as a sounding board could not be determined, but it may be definitely concluded that the murmur was a direct consequence of the chest injury, and that connective tissue played a distinct rôle in its causation. The act of raising the arms probably served to relax the strand of tissue, which was taut in other positions. Except for the unusual physical sign, the condition of Private A. F. was normal on discharge, and he has returned to civil life able to assume his prewar occupation.

THE ADVANTAGES OF THE VAGINAL ROUTE IN RESECTION OF THE RECTUM FOR CANCER

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No attempt will be made here to enter into a full discussion of cancer of the rectum. That subject is too large for the scope of this paper. It is a well known fact that sufferers from cancer of the rectum may live a long time, much longer than those who suffer from cancer in almost any other part of the body. Cancer of the rectum offers more prognostic hope than does cancer in other locations. This is largely due to two factors: The type of cancer is usually adenocarcinoma, which is slow growing; and the region about the rectum is very scant in lymphatic supply, and therefore metastasis is slow and does not occur until the growth has encroached on other surrounding structures.

It is remarkable that cancer of the rectum may exist for so long a time without being discovered, and when

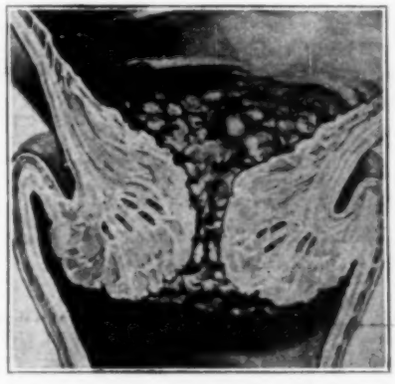

Fig. 1.—Rectum completely blocked by tumor.

discovered is found not to have involved surrounding tissues. Indeed many cases go on to a condition in which the rectum is completely blocked, and obstruction of the bowel takes place, before they are found, the symptoms being attributed to hemorrhoids or some other condition largely because no careful examination has been undertaken by the attendant.

Much has been written lately concerning the abdominal route, the sacral route and the combined abdom-

inal and perineal routes. The old Kraske operation and others have been relegated to the junk heap, while the merits of the others and the question of a primary colostomy have been discussed at length; but I cannot find that much is said about the vaginal route in women, the simplest and easiest method of all.

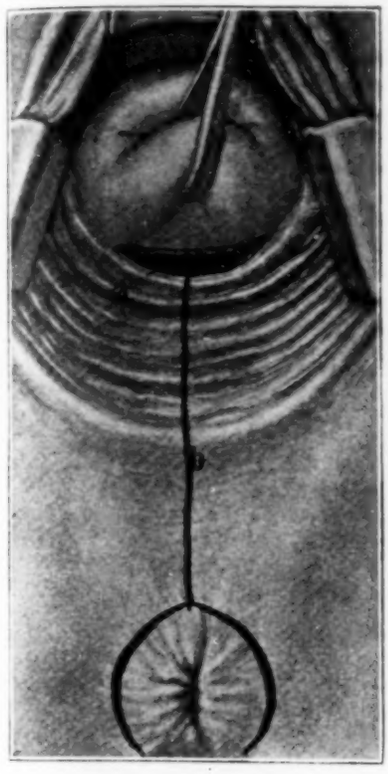

Fig. 2.—Long median incision from cervix to anus.

Fig. 3.—Vaginal flaps laid back exposing rectum (courtesy of Lea & Febiger).

Fig. 4.—Rectum and growth lifted from its bed.

It is undoubtedly true that in the greater number of operations on the rectum for cancer the condition of the patient is much improved by a preliminary colostomy, just as happens in draining a bladder before doing a radical prostatectomy. Toxins are eliminated thereby, and opportunity is given for ulceration to be overcome. Inflammation is reduced, and an inoperable is often converted into an operable case. Intestinal obstruction is obviated if impending. The accompanying symptoms of pain, constant secretion and defecation are relieved, so that the patient may sleep and rest. Recuperation is thus insured, and the patient resumes her usual routine of life and is soon put into such a condition that she may successfully withstand the more radical major operation.

The technical advantages of the vaginal over the sacral route should be apparent to him who understands the anatomy of the pelvis. There are no important structures to be taken into account below the peritoneal fold except the two tubes which pass out through the levator ani muscle, namely, the vagina and the rectum. The operation consumes less time, there is less traumatism to the tissues, there is less hemorrhage and consequently less shock, which is an important factor in these weakened and toxic patients. There is no bone resection as in most perineal and sacral operations. I have always thought that the chiseling and sawing of bone in any operation must add materially to the shock of the operation. The dissection by the vaginal route is easy, the exposure is more perfect and one works in an open field rather than in the dark, thus being able completely to control hemorrhage.

Fig. 5.—Resection of rectum (upper section should show clamp applied) (courtesy of W. B. Saunders Company).

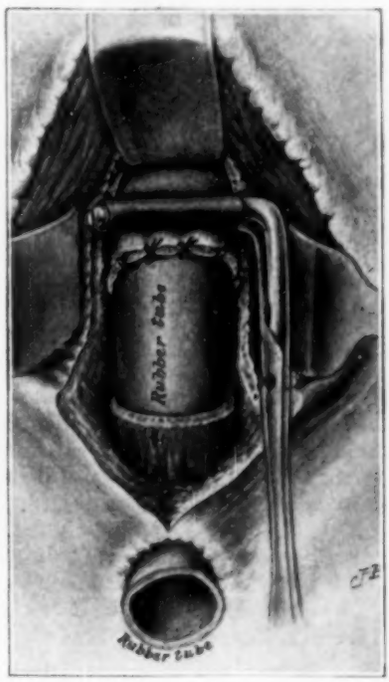

Fig. 6.—Tube sewed into upper segment emerging from anus.

Instead of being a *bête noir* of surgery, this operation for resection of the rectum for cancer resolves itself into little more than a complete dissection of the

perineal structures for extensive vaginal repairs. The late John B. Murphy was an ardent advocate of this method of approach and did much to develop its technic. The operation is practicable only when the tumor is movable and is situated in the lower half of the rectum. If it is as high as the rectosigmoidal junction, then the combined abdominal and vaginal operation should be employed.

In beginning the operation, the sphincters should be thoroughly divulsed and the secretions of the rectum well washed away. A transverse incision is then made across the vagina at the junction of the mucous membrane of the posterior vaginal wall and the cervix. Perpendicular to this a median incision is carried down the whole length of the posterior vaginal wall over the perineum down to the anus. If the sphincters are to be retained, this incision should be deflected to each side at the anus. If not, it should continue completely around the margin of the anus. As the long median incision is deepened through the vagina and perineum down to the rectum, a large, thick flap of tissue is laid back on either side. This is made up of the muscular and ligamentous attachments of the vagina and rectum. When the rectum is reached, the fingers may be passed down along side of it and by blunt dissection the hand is passed, finally, completely behind it, lifting it out from its bed. It may then be easily pulled forward and it is remarkable how much of a loop of bowel may thus be pulled down. If it is rigid and there is difficulty in bringing it down, the simple expedient of nicking the posterior layer of the mesentery of the sigmoid at its lowest point just at the peritoneal fold will overcome the difficulty and allow it to come down freely.

The rectum is then clamped with a right angled, rubber tipped clamp about two inches above the margin of the growth and the rectum divided. If the sphincters are to be retained, the distal end of the rectum is similarly clamped and divided below the tumor. A 1 inch rubber tube is sewed into the upper end of the bowel and brought down and out through the anus, over which the anastomosis of the bowel is completed. After making the anastomosis it is well to draw the tubing down, slightly invaginating the upper into the lower bowel, and making a double row of sutures so as to assure perfect union and prevent leaks.

In case the sphincters are removed with the rectum, the upper end of the bowel is brought out a full half inch or more beyond the anal skin and sewed fast to it. There is apt to be less stricture, perhaps, when the sphincters are removed than when they are not, but of course at the expense of fecal control. It is necessary to follow up the patient in these cases and keep the anus and bowel well dilated with rectal bougies as an after-treatment to prevent the formation of strictures.

After the rectal work has been completed, the muscles of the perineum are built up layer by layer, just as they would be in an extensive repair of the perineum, the lower lip of the cervix being sewed down to the transverse upper incision in the vagina.

Fig. 7.—Anastomosis over tube completed.

Fig. 8.—Sutures placed for vaginal and perineal repair (courtesy of W. B. Saunders Company).

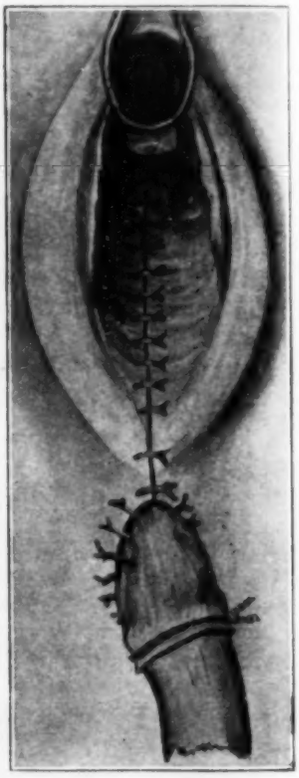

Fig. 9.—Vaginal excision of the rectum—the rectum sutured. A tube is tied into the divided end of the bowel.

Abdominal Symptoms Following Typhoid Inoculation.—Such symptoms were observed at Camp Custer in twenty-seven out of sixty-five admissions for typhoid reaction, and usually were not a cause of confusion in differential diagnosis from appendicitis. Typhoid inoculation did not appear to have played any demonstrable rôle as a cause of appendicitis or its recurrence. Typhoid inoculations have apparently resulted in recrudescence of old gallbladder disease; in a number of these there was a previous history of typhoid. In every case of abdominal pain, appendicitis should be considered, but attention to history and other symptoms and signs should usually result in avoidance of mistakes. A helpful thought in medicine is that reliance on any supposed pathognomonic sign, unsupported by other evidence, is dangerous.—*Review of War Surgery and Medicine* **2**:28, 1919.

Clinical Notes, Suggestions, and New Instruments

ANEURYSM OF RIGHT VENTRICLE FOLLOWING TRAUMA: REPORT OF FATAL CASE

GEORGE H. CURFMAN, M.D., AND C. REX FULLER, M.D., SALIDA, COLO.

History.—N. H., aged 18, complained, July 19, 1917, of the effects of a kick in the epigastrium by a mule. Since the injury the patient had noticed difficulty in breathing, which had steadily increased in intensity. There was a persistent cough, accompanied by expectoration, the sputum consisting of frothy mucus, tinged with bright blood. The abdomen had become greatly enlarged during the previous month; likewise the ankles and legs. The personal and the family history were both negative.

Physical Examination.—The face was swollen, with marked puffiness under the eyes. The lips and the tongue were very cyanotic. The pulsation in the jugular veins was pronounced. On lying down the whole face became extremely cyanotic. The lungs were negative. The cardiac impulse was heaving in character and could be seen to extend from the seventh interspace about 1½ inches to the left of the nipple line over the entire cardiac area. The area of cardiac dulness was greatly increased both to the right of the sternum and to the left of the midclavicular line. Auscultation elicited a loud systolic murmur, which was most audible at the apex, and was transmitted over the entire cardiac area. At the end of systole this murmur became whistling in character, later fading into a faint blowing murmur. The second pulmonic sound was accentuated. The abdomen was distended with fluid and there was marked tenderness to pressure, most noticeable in the epigastrium. The liver extended about three finger breadths below the left costal margin and was tender to pressure. The

Fig. 1.—Anterior view of right ventricle showing aneurysm.

lower extremities from the ankles to above the knees were swollen and edematous.

Clinical Course.—The patient gradually became worse; the cyanosis deepened, and the abdomen became steadily more distended with fluid. The pulse became irregular and weak, and, Feb. 27, 1918, the patient dropped into a mumbling delirium and died at 5:20 a. m., Feb. 28, 1918.

Necropsy.—On opening the chest wall the pericardial sac was found to be filled with about 1 liter of light, amber-colored fluid. The pericardium was greatly thickened. The lungs were normal. The heart was enlarged and weighed 723 gm. The circumference at the base of the ventricles was 13½ inches. The length of the right ventricle was 7 inches and of the left ventricle 5 inches. At the apex of the right ventricle was found an irregular tumor about the size of a

Fig. 2.—Aneurysm opened, the match showing opening into the right ventricle.

half lemon, which proved to be a sacculated aneurysm of the right ventricle, connected with the right ventricle by an opening large enough to admit the index finger. The right ventricle was greatly hypertrophied with a relative insufficiency of the tricuspid valve. The abdomen was normal except for a large amount of ascitic fluid.

A CASE OF PROBABLE PATENT DUCTUS ARTERIOSUS IN AN ADULT*

CLEMENT H. ARNOLD, M.D., SAN FRANCISCO

The patient presented herself to me in February, 1919, with the complaint of dyspnea, always more or less marked, but latterly very severe on exertion; vertigo; loss of 20 pounds in three months; moderate loss of appetite, some slight gastric indisposition and palpitation.

HISTORY OF CASE

She stated that she was the wife of a retired military officer, whom she had accompanied on all of his official duties, having cooperated energetically in his affairs and social activities. She has been moderately athletic, has had a few minor attacks of rheumatism, but recently rather severe, precordial pains radiating high into the axilla, down the left arm and into the epigastrium. All her symptoms are negative in the anamnesis. There is one child living and well at 42; no subsequent pregnancies; catamenia at 50 with no disagreeable symptoms.

PHYSICAL EXAMINATION

The status praesens was that of a well preserved, slender woman of about 63, with dark vermilion lips, bluish mucosae, purplish red spots on the cheeks, slight bilateral epiphoria, red ears and markedly pulsating cervical vessels. The general appearance reminded one strikingly of chronic emphysema, coal-tar poisoning, advanced mitral stenosis, polycythemia and congenital heart lesions.

The eyes, ears, nose, mouth, teeth, throat and thyroid gland were normal. The thorax was slender, with a slight right scoliosis involving the upper thoracic vertebrae. There was a decided prominence over the upper precordium, implicating principally the first, second and third chondrosternal junctures. There was a rather more palpable than visible pulsa-

* Presented before the San Francisco County Medical Society, April 1, 1919.

tion in the second left interspace one finger's breath from the left sternal line and there was a thrill practically coincident with systole in that area.

Percussion of the chest, excepting the heart, showed no gross abnormalities, though there was some dulness at both bases with a few consonating râles that disappeared after cough; probably secondary to the cardiac condition.

Heart.—Palpation showed a forcible heave over the lower precordium of the choc en dôme type, with a thrill as noted

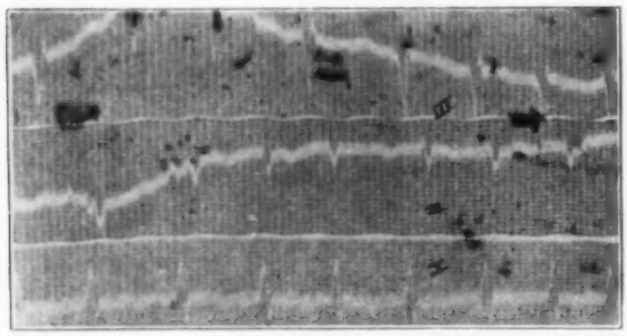

Fig. 1.—Electrocardiogram: Moderate irregularity of ventricles with no definite P waves. S is very marked in Lead 1, ventricular complex small in Lead 2, R highest in Lead 3. The conclusion was that there was hypertrophy of the right ventricle relative to the left, and that there was possible fibrillation.

above. Percussion revealed the following: The point of maximum intensity was at the fifth interspace, 9 cm from the midsternal line; retromanubrial dulness 3 cm. to the right and 7.5 cm. to the left; relative cardiac dulness 5.5 cm. to the right and 11.5 cm. to the left. Auscultation revealed a very irregular heart with what appeared to be interpolated ectopic beats. The first sound was loud and clear. At the apex the second sound was loud and metallic in character; there were no murmurs at the apex. The pulmonic second was very much louder than the aortic, having a note like the aortic bruit de tabourka found in hypertension. There were no murmurs except at the pulmonic area, where there was a moderately harsh "roaring" or "rumbling" murmur, which was accentuated at each systole. It was propagated out along the under side of the clavicle and lost at the deltoid sulcus.

The area of dulness indicated by the left lateral extension of the retromanubrial dulness joined the upper convexity of the relative cardiac dulness very steeply, demonstrating the so-called Gerhardt's area.

The reflexes were normal; the genitalia negative. There were no general glandular enlargements. The abdomen showed a moderate first degree of visceroptosis, with a right oblique inguinal hernia presenting through a wide-open ring with soft edges.

The pulse was normal in tone, very irregular and with a rate of 110; the vessels were not noticeably sclerosed. The blood pressure was 142 systolic and 80 diastolic. The patient weighed 115 pounds.

LABORATORY TESTS

The Wassermann was negative. The urine showed a slight trace of albumin. The phenolsulphonephthalein test resulted in an excretion of 32.5 per cent. in two hours. The stomach test meal showed 15 per cent. free acid, and 25 per cent. total acidity. Blood examination revealed red blood cells, 5,500,000; white blood cells, 8,700; hemoglobin, 95 per cent. The differential blood count revealed: polymorphonuclears, 49 per cent.; lymphocytes, 47 per cent., and transitionals, 4 per cent.

The electrocardiogram shows that the right ventricle as compared to the left is hypertrophied, and that fibrillation is probably present. Therefore it is evident ectopic beats may not be recognized when fibrillation is present; and if this is the case the statement made above is invalidated (Fig. 1).

The roentgenogram (Fig. 2) gives a most interesting picture. There is an increase in the transverse diameter of the heart shadow to right as well as left; probable dilated internal mammary artery (Fig. 2, 1), indicating increased collateral circulation; evidence of sclerosis, as there is (Fig. 2, 2) a definite crescentic plaque in the knob of the aorta. There is an increase in the transverse diameter of the mediastinal shadow, with marked prominence in the region of the pulmonary artery (Fig. 2, 3); there is a definite expansile pulsation of this prominence.

TREATMENT

It was observed that the initial bluish color of the mucosae and lips was greatly mitigated by rest, changing to a reddish pink. On the exhibition of digitalis the murmur at the pulmonic area became modified, growing louder and more continuous, and prolonged somewhat into the diastolic phase. As far as the heart is concerned the evidence caused the diagnosis of a probably patent ductus arteriosus, with a more or less surely accompanying patent foramen ovale.

COMMENT

The ductus arteriosus is the vessel which in fetal life connects the pulmonary artery with the aorta. It is usually about 10 to 15 mm. in length, and arises from the left branch of the pulmonary artery, joining the under side of the aortic arch just distal to the origin of the left subclavian artery, and represents the lateral vessel of the left sixth branchial arch. Its lumen usually becomes occluded a few months after birth.

One of the misconceptions that has prevailed is that the ductus in all adults is of insignificant size, but there are many cases in which, though it is by no means patent, examination reveals that it may be dilated to the size of a small lead pencil, and in the new-born may equal the main pulmonary trunk in circumference. Its existence with some of the attendant anomalies were known to Galen and Harvey, and since then many observations have been made as to its existence and persistence.

After the infant is born there very soon occur modifications of action and function in many parts of the body, the most extensive and spectacular being those of the circulation. It

Fig. 2.—Roentgenogram of heart: *1*, dilated internal mammary artery evidence of sclerosis; *2*, crescentic plaque in the knob of the artery; *3*, prominence in region of pulmonary artery.

is, of course, well known that the ductus arteriosus serves to return from the right heart the unaerated blood from the head and upper extremities to the aorta and thence to the placenta. Since there is very little intrinsic circulatory activity in the pulmonary artery, owing to inactivity of the lungs, the pressure therein is relatively low.

The opening of the ductus into the aorta is by means of a flap-valve-like arrangement, similar to that of the ureters

into the bladder. As soon as the lungs begin to functionate and require a greater supply of blood with freer flow, the pressure falls, while that in the aorta becomes relatively higher. No blood, or very little blood, flows through the ductus and the flap of the valve is pressed down against the opposite wall of the ductus and occlusion is gradually effected; the lack of blood in the ductus depletes its vasa vasorum, fibrotic degeneration sets in and there is a pari passu contraction of the muscle tissue contained in its wall (Abbott).

When the ductus remains patent it is often associated with other defects in the structure of the heart, such as patent foramen ovale and interventricular septum.

Its exact pathogenesis under such a condition is, at best, obscure. Abbott says: "The causes of patency of the duct are to be sought in the conditions of its normal closure, and this must depend on the influences, mechanical or otherwise, of the changes in the circulation at birth, and on the action of the vessel wall, itself a fetal structure destined to involution."

It is probable, however, that "anything which causes obstruction to the flow of blood through the arch of the aorta in fetal life (aortic stenosis or atresia, congenital mitral stenosis, coarctation of the arch of the aorta, etc.) will cause the right ventricle to carry on the greater part of the circulation and force more blood through the ductus arteriosus. This condition, of course, persists at birth; the ductus, which now represents a main blood channel, remains open. The flow continues in the usual direction backward from the pulmonary artery into the aorta" (Hirschfelder). A narrowing of the pulmonary artery will reverse the flow.

As a primary and uncomplicated occurrence it is one of the rarest of cardiac anomalies, and the literature on the subject is correspondingly scanty.

The ductus may remain patent in a variety of forms which it is not necessary to enumerate here, by all odds the most interesting and the one giving the most signs and symptoms is that in which there succeeds an aneurysmal dilatation, with more or less involvement of the same nature in the pulmonary artery.

Most of these patients do not attain to adult life, though the condition is congruent with normal development during a long and useful career.

The most likely other forms of cardiac defect which it was deemed necessary to consider were patent foramen ovale, aneurysm of the sinuses of Valsalva, and pulmonary aneurysm. The first may certainly in this case be present, considering the frequency with which it accompanies a patent ductus; the second is not likely, as the signs are not present and there is nothing in the plate to indicate it; the last condition, if it does exist, is only a part of the whole, since its characteristic signs are not present, the dilatation is rather too high and too far laterally, and there is no evidence of pressure on the lungs within the mediastinum.

CONCLUSIONS

In conclusion, it will be interesting to compare the classical signs and symptoms given by the authorities on this subject (Osler, Abbott, Barker, Hirschfelder and Mackenzie), with those found in this case:

A proved case revealed the following conditions: (1) Gerhardt's area of dulness; (2) pulsating pulmonary artery; (3) dilated and hypertrophied right ventricle due to regurgitation into the pulmonary artery through the ductus; (4) dyspnea on exertion; (5) more or less cyanosis; (6) polycythemia may be present; (7) precordial bulging; (8) greatly accentuated pulmonic sound; (9) characteristic rough murmur with propagation out along clavicle; (10) Abbott says also that "arteriosclerotic patches are not uncommon in the neighborhood of the duct in the aorta . . . ."

By comparing this with what has been said about this case, it will be seen that all of the enumerated criteria were found. Besides, one may see that the arteriosclerotic patch mentioned in the tenth item is present in this patient (Fig. 2), and is remarkable as occurring in a woman with no other demonstrated sclerosis and a normal blood pressure for her age. For comparison, I should like to refer the reader to the plate shown by Hirschfelder,[1] illustrating a known case which is practically a duplicate of the one presented herein.

I am perfectly well aware that in such cases the only obiter dictum is necropsy, which can not be performed and which I hope will not for many years. But the findings were so clean-cut in this case and tallied so well with what is believed to indicate such a condition intra vitam, that I have deemed it worthy of record.

Under tincture of digitalis, 10 minims three times a day after meals, a general tonic and some light exercises serving to promote and maintain better respiration, the patient's heart has become more regular, the dyspnea on exertion has practically disappeared and she has gained 7 pounds in four weeks, while her general mental attitude is much more wholesome.

405 Medical Building, Bush and Hyde Streets.

INSTRUMENT FOR HOLDING PERIPHERAL NERVES DURING SUTURE

W. Wayne Babcock, M.D., Fort McPherson, Atlanta, Ga.
Lieut.-Col. M. C., U. S. Army

The instrument for holding peripheral nerves during suture which is here described and illustrated has greatly facilitated the suture of divided nerves and has reduced, in some cases, the actual time of suture by one half.

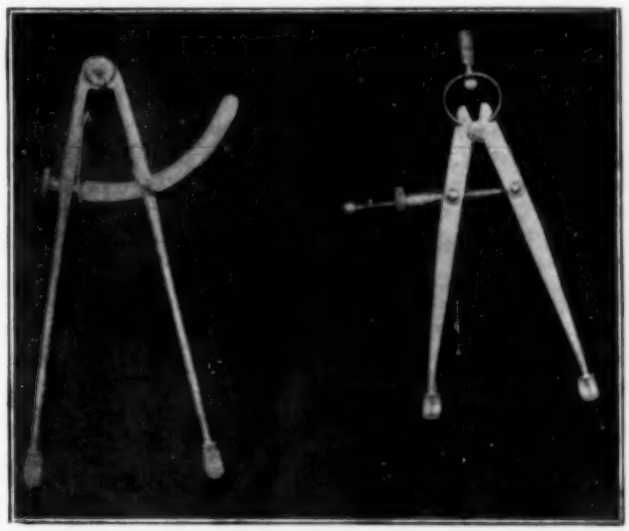

Fig. 1.—A, nerve clamp, showing glass headed pins used to fasten the nerve to the instrument. The milled screw to the left is a fine adjustment; B, insrument made from a pair of Starrett calipers, by brazing perforated curved ends and short pieces of small German-silver tubing (to receive the pins) to the arms of the instrument.

The halves of the instrument are applied and pinned to the nerve trunk 2 or 3 cm. distal to the proposed point of nerve resection. The nerve ends are then freed and sliced back by a razor blade until the section shows the desired fasciculi. By closing the arms of the instrument the nerve ends are apposed. After suturing the accessible edges of the nerve sheath, the instrument is turned over and the rest of the circumference of the sheath is sutured. The pins are now gently withdrawn and the instrument is removed. By applying the instrument before completely freeing and dividing the nerve, rotation and retraction of the nerve ends are prevented. After the instrument is applied, it should at once be tightened sufficiently to produce moderate traction. If there is a wide separation between the nerve ends, the continued tension will cause the nerve to stretch. The instrument may then be gently retightened from time to time as the operation proceeds, thus reducing the gap. The instrument should be made in at least two sizes. The grooves of

1. Hirschfelder: Diseases of the Heart and Aorta, J. B. Lippincott Company, Ed. 2, p. 543.

the large instrument should be about 12 mm. and of the small instrument about 6 mm. in diameter. It may readily be made from a pair of Starrett calipers by brazing appropriate ends (Fig. 1 b). For the larger nerve trunk the small, glass-headed, steel pins of daily use serve very well. For

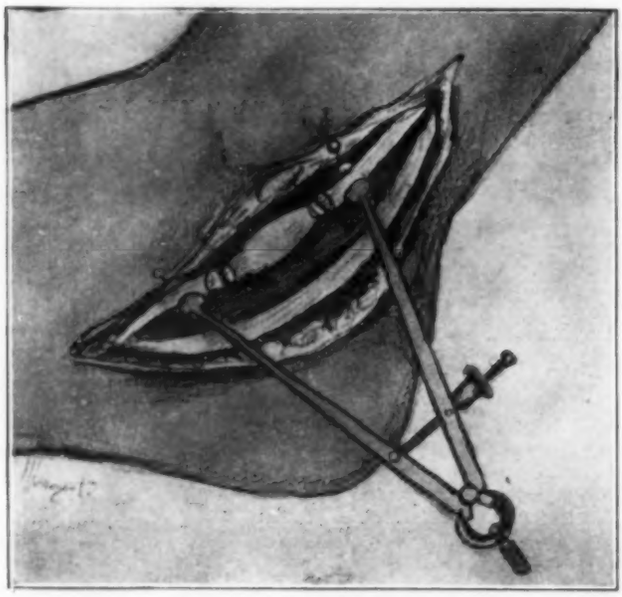

Fig. 2.—Nerve clamp pinned to posterior tibial nerve at the ankle, preparatory to resection of a neuroma in continuity. Repeated incisions are made into the neuroma until sufficiently normal sections of nerve trunk are found for end to end suture.

very small nerves very fine needles to which metal or glass heads have been fused may be used. It is somewhat more convenient to introduce the needles from the shaft side of the instrument. We have had the instrument made also in the form of delicate hemostatic forceps with a long rachet adjustment. The instrument as illustrated in Figure 1 a has a thumb screw at the left which provides a fine adjustment.

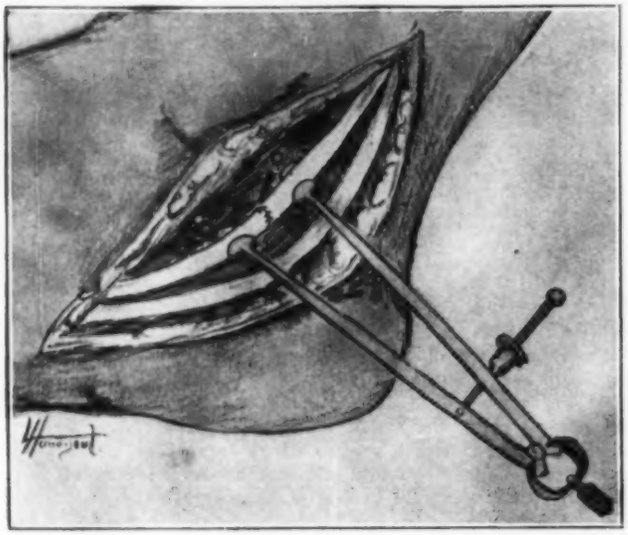

Fig. 3.—The neuroma has been freed and excised, the arms of the instrument brought together, permitting the nerve ends to be accurately united without tension by very fine black silk sutures which enter only the sheath of the nerve. The instrument obviates the need of the harmful transfixion or relaxating sutures through the nerve trunk.

If properly used the instrument should rarely tear out. It is believed that the reduction in the handling of the nerve outweighs the slight damage produced by small needle punctures. In over 100 cases of division of peripheral nerves from gunshot injury, we have found none in which an end to end suture could not be performed. For the larger nerve gaps, it is of course necessary to flex or extend the adjacent joints and perhaps also to dislocate the nerve to a new location. A number of gaps of 12 cm., of median, ulnar and sciatic nerves, have thus been overcome.

We are indebted to Major William G. Crumley, M. C., and to the Orthopedic Shop of this hospital for the preparation of working models.

Therapeutics

SUGAR IN THE URINE

The presence of sugar in the urine is a condition calling for investigation. While the occurrence may be accidental, or incidental to some indiscretion in diet, a decision must be made as to its cause. In many well persons sugar will readily appear in the urine if the normal starch and sugar ingestion is overstepped. These patients should be warned of their tolerance deficiency, and told that such intolerance may increase if they eat according to their desires. This narrow limit of tolerance may be inherited, or it may be caused by some glandular disturbance, or by previous disease that has left its mark on some organ concerned in sugar metabolism.

Excessive nervous or mental tire may be the cause of the sugar metabolic instability, or overmuscular activity, combined with some glycogen metabolism mistake, may cause sugar to appear in the urine. In other words, a patient found at times to have sugar in his urine should be studied, and then warned of the probable cause. A suitable, carefully modified diet should be arranged for him. His urine should be retested every few months.

GLYCOSURIA

The term "glycosuria" should not be used to cover up the possibility that more or less persistent excretion of sugar in the urine, even if readily prevented, is probably a mild diabetes or may be the forerunner of a severe diabetes. However, many patients with glycosuria have no other symptoms of diabetes, such as thirst, polyuria, dry skin, itching, loss of weight, and tendency to hyperacidity or to acidosis and its symptoms. In these cases, the pathologic condition is generally due to infection somewhere, or to glandular disturbance, also often caused by infection. Although in real diabetes boils readily occur from outside irritation and outside germs of infection, many boils and eruptions in both mild and severe diabetes are doubtless due to focal infection. Glycosuria may be caused by pyorrhea alveolaris, whether by such infection acting on the thyroid, the suprarenals, or the pancreas, cannot be determined; but many times glycosuria will disappear when the pyorrhea is eradicated, and these patients can again eat ordinary amounts of carbohydrates. It has long been recognized that thyroid and pituitary disturbances directly or indirectly may cause sugar to appear in the urine. Suprarenal disturbance may produce a glycosuria. Doubtless other focal infections, notably, perhaps, infection of the gall-bladder, may cause glycosuria, or be the cause of real diabetes.

Some of these infection cases may be the ones that have shown improvement under ipecac (emetin) or

under yeast treatment, while such treatment utterly fails in diabetes caused by other conditions. Even in these cases of mild diabetes, the blood pressure is generally very low, either from some insufficiency of the suprarenals or because the infection has also weakened the heart muscle.

The point it is desired to make in these cases is that every cause for the glycosuria should be sought. It is not sufficient to be satisfied with a regulation of the diet, even if such modification renders the urine sugar free.

DIABETES MELLITUS

1. As has been suggested, every possible cause should be sought and all side irritations and infections (if present) should be removed.

2. Inherited tendencies should be ascertained, both as to diabetes and to obesity.

3. The prognosis, even in childhood, is much better than it was before Allen clarified the diet treatment.

4. Loss of weight, even in the thin, need not be a matter for worry.

5. The amount of sugar lost per day on an ordinary diet and on ordinary exercise should be ascertained.

6. The presence or absence of diacetic acid and acetone bodies should be noted.

7. If the case seems a mild one, the starvation period may be taken with the patient up, but at home. If the case is severe, especially if there are signs of increased acidity, he must be in bed, as any muscular exercise adds to that acidity.

8. All fats should be excluded from the diet for several days before the starvation period is begun.

9. During the starvation period, the patient should receive plenty of water, with perhaps some clear tea or coffee. Mineral waters are of advantage.

10. Ordinarily the patient should be sugar free in forty-eight hours. If he is not, the starvation period may be prolonged another day or two.

11. If the heart is weak and coffee does not help it, strychnin, in doses of $\frac{1}{60}$ grain once in four hours, may be given, or digitalis may be given.

12. If diacetic acid, betaoxybutyric acid and acetone are dangerously increased in amount, whisky may be given, about one-half an ounce every three hours. Sodium bicarbonate is the most used treatment for this condition, and the dose must be large by the mouth; by the rectum in 10 per cent. solutions (perhaps by the Murphy drip method); and from 2 to 4 per cent. may be given, slowly, intravenously in physiologic sodium chlorid solution. If there is edema, which is a bad symptom, the alkali either should not be given, or given in small doses only. It has been suggested that perhaps it may be better not to give an alkali which may protect the dangerous ammonia from being used to neutralize the extra acid.

13. When the urine is sugar free, the use of foods containing a little starch should be begun to find the limit of tolerance; then small amounts of protein should be added, and later very small amounts of fat.

14. Diet tables for a gradual increase, especially of starch contained in vegetables, need not be given here, as they may be readily consulted elsewhere. Suffice it to say that the danger in a diabetic diet is the withdrawal of carbohydrates and the coincident allowance of too much fat. Sodium bicarbonate seems to help a diabetic properly to metabolize starch.

15. Constipation should be prevented.

16. There should be a fast day once a week. If the case is a mild one, this may be a green vegetable day, or an oatmeal day.

17. If these patients cannot take, or are not allowed to take, milk, some extra calcium should be given, perhaps as lime water.

18. Mild exercise is of advantage in diabetes; hard exercise is bad in severe diabetes, as it tends to precipitate an acidemia.

19. Even if the urine is sugar free, there may be a hyperglycemia. Also, acidosis may occur without diacetic acid in the urine. Hence the patient should be carefully studied, even with normal urine.

20. If a diabetic is to undergo an operation, fats should be excluded from the diet and starches should be reduced, but not absolutely removed; alkalis should be increased before the operation.

21. A diabetic woman becomes more acid during menstruation.

22. A diabetic should always dress warmly, and, if possible, he should go to a warm climate.

23. If a pregnant woman has a large amount of sugar in the urine which is not readily prevented by diet, consultation should be had as to the advisability of causing abortion or promoting premature labor.

Mental Defect in a Rural County.—That society pays a heavy penalty for the neglect of its children is emphasized by the results of a study made in an Eastern state by the Children's Bureau of the U. S. Department of Labor in collaboration with the U. S. Public Health Service. The conditions surrounding the 192 feebleminded children included in the study revealed the coincidence of poverty, drunkenness and delinquency with feeblemindedness. The county studied is a backward rural county, such as may be found in many sections of the United States. It boasts no town of more than 2,500 inhabitants. Bad roads and inadequate railroad facilities keep living conditions primitive. In a few homes spinning and weaving is still done on old-fashioned wheels and looms handed down from Revolutionary times. Whipping remains a punishment for larceny. School and church "socials" and yearly camp meetings are about the only recreational activities in the remoter districts. The 192 feebleminded children studied were between the ages of 6 and 20. Twenty-seven of them were so defective that they could not attend to their personal needs; sixty-five had serious physical handicaps; eighty-six were not receiving the care they should have. Only four children had been placed in an institution, unfortunately the county almshouse, which was not adapted to the care of such cases and had not the legal control necessary to insure proper protection. The parents of 54 per cent. of the white children and 71 per cent. of the colored children who were living in their own homes, were without the means to provide properly for their families. Although more than two fifths of the children from 12 to 20 years of age were capable of doing work under supervision and might have been helped by industrial training to perform higher grades of work, the county afforded them no opportunity for special training. The schools were inadequate for the needs of normal children. Most of them were of the one-room, one-teacher type, and many of them were so situated that numbers of children could claim exemption from attendance because of the distance to be traversed. The report suggests the possibility of providing training and supervision whereby certain types of mental defectives may safely remain in the community. The urgent need for institutional provision for those who cannot be given proper care in their own homes is emphasized.

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SATURDAY, JUNE 7, 1919

NAUSEA AND VOMITING OF PREGNANCY

A group of symptoms affecting the pregnant woman and varying in severity from mild "morning sickness," through a range of more intense nausea, to the extreme of "pernicious vomiting" presents difficulties that are not always easy to combat. The theories advanced in explanation of the origin of these phenomena are unsatisfactory because most of these theories bear on symptoms that are at best only part of the possibilities presented by this particular type of nausea and vomiting. Acidosis, for example, which has been one of the explanations offered in the past, fails to account for the features observed in many instances. The hypothesis of "suboxidation" has not justified itself in attempting to explain these, as well as various other, pathologic disturbances. The hypothetic poison has not been discovered. The alleged accumulation in the blood of nonmetabolized nitrogenous compounds, such as amino-acids, has not been substantiated. As recent writers have summarized the situation: "Neither from the point of view of cause or cure has any satisfactory solution of the problem of nausea and vomiting or pernicious vomiting been arrived at. Rest in bed, forced fluids, attention to excreta, diet, and control of the nervous system by the use of mild and strong sedatives, appears to be the most commonly adopted procedure for this condition."[1]

There are various indications that point to the dominance of some metabolic factor in the origin of both the mild and the severer types of the nausea and vomiting of pregnancy. The symptoms appear most frequently in the morning after refraining from food for some time. Moreover, the common simultaneous occurrence of a ketonuria is an added indication of a metabolic upset. This symptom is usually observed when the supply of actually utilized carbohydrates is low, for example, when sugars fail to be oxidized, as in diabetes. Shortage of physiologically available carbohydrate, usually expressed in the glycogen supply of the tissues, frequently leads to infiltration of the liver with fats. Present-day physiologic evidence points to this phenomenon as an indication of carbohydrate starvation in the body. Fat is not deposited in the liver while carbohydrates are still available. In the liver, says Lusk, there is an antagonism between glycogen deposit following carbohydrate ingestion and fat deposition.

Mottram[2] has observed that in the pregnancy of ill-nourished animals, the liver may become overloaded with fat, just as is true in certain stages of inanition. In view of all these symptomatic similarities Duncan and Harding[1] of McGill University Faculty of Medicine, Montreal, have argued that these two factors, pregnancy and a short period of hunger, might account for the periodicity of morning sickness, and that the metabolic factor here concerned is a temporary relative lack of glycogen in the liver. Such a condition, they add, leads to a fatty infiltration of that organ.

The obvious practical conclusion that follows from this hypothesis is to preserve or enrich the supply of available carbohydrate for the patient. This is by no means a new procedure. Despite the current indifference to such a plan, the Canadian investigators have given renewed consideration to it. They have endeavored, in cases of varying severity of nausea and vomiting in pregnancy, to correct the assumed deficiency of carbohydrate supply by administering glucose or lactose, but mainly the latter, and they have supplemented this by a high carbohydrate diet. Duncan and Harding insist that psychologic advantages are not responsible for the good results which they have observed after such treatment. The gratifying report of success in more than seventy cases furnishes a justification for calling attention anew to what is at least a simple procedure in dietotherapy.

1. Duncan, J. W., and Harding, V. J.: A Report on the Effect of High Carbohydrate Feeding on the Nausea and Vomiting of Pregnancy, Canad. M. A. J. **8**: 1057 (Dec.) 1918.

THE MODE OF ACTION OF MUSTARD GAS—DICHLORETHYLSULPHID

The veil of secrecy behind which many of the scientific investigations in relation to the prosecution of the war have necessarily and properly been conducted is gradually being lifted. Among the large number of startling items of information thus disclosed, few claim greater medical interest, particularly in respect to novelty and far-reaching significance, than do the war gases. The effects of chlorin attracted attention because this gas was the first to be employed, in the spring of 1915, in that hideous inhumanity known as gas warfare. The interest in chlorin and some of its later substitutes has been eclipsed by the consideration of the so-called mustard gas, dichlorethylsulphid, which had assumed a rôle of primary importance by the time the armistice was signed.

The distinctly local effects of mustard gas have been repeatedly described. They consist mainly of conjunctivitis and superficial necrosis of the cornea; hyperemia, edema, and later necrosis of the skin, lead-

2. Mottram, V. H.: J. Physiol. **38**: 281, 1909; **49**: 23, 1914.

ing to a skin lesion of great chronicity; and congestion, and necrosis of the epithelial lining of the trachea and bronchi.

These localized effects, severe though they may be, have not always seemed to suffice to account for the symptoms that sometimes attend intoxication with mustard gas. Such phenomena as vomiting and diarrhea, hyperexcitability and convulsions, and irregularities of the heart, observed in animals exposed to the deadly vapors, suggest the presence of systemic effects that are due to absorption of the poison into the blood stream and its distribution throughout the organism. This point of view is substantiated by the investigations of E. K. Marshall[1] and his colleagues in the Pharmacologic Research Section of the Medical Division of the Chemical Warfare Service, U. S. Army. Dichlorethylsulphid appears to be excreted in the urine, in part at least, as dihydroxyethylsulphid, a compound devoid of chlorin and shown to be comparatively nontoxic. The lesions of the intestine suggest that excretion of the substance may also take place there.

An outstanding fact about mustard gas is its progressive hydrolysis in aqueous solution whereby it breaks down rapidly to yield hydrochloric acid and residual compounds of low toxicity. Marshall and his associates have therefore attempted to correlate the toxicity of dichlorethylsulphid with the liberated hydrochloric acid. They picture the sequence of events as follows: Dichlorethylsulphid is very slightly soluble in water and very freely soluble in organic solvents, or has a high lipoid solubility or partition coefficient. It would, therefore, be expected to penetrate cells very readily. Its rapid powers of penetration are practically proved by its effects on the skin. Having penetrated within the living cell, it would undoubtedly hydrolyze. The liberation of free hydrochloric acid within the cell would produce serious effects and might account for the actions of dichlorethylsulphid.

Observations made on lower forms of animals likewise favor this hypothesis. Even though the undecomposed "mustard gas" is only slightly soluble in water, its peculiar lipoid-soluble properties enable it to penetrate into cells and presumably collect in relatively high concentration in the cell lipoids and fats of the protoplasm. In this situation, Clowes, Lillie and Chambers[2] remark, the substance serves as a reservoir of toxic material which continually enters solution in the aqueous phases of the protoplasm and is continually being decomposed there. Since, by its hydrolytic decomposition, it yields acid, the dissolved "mustard" acts destructively on the protoplasm as soon as the available buffer compounds (which normally prevent protoplasmic hyperacidity) are exhausted. The destructive action is thus due primarily to the hydrochloric acid freed by hydrolysis. The theory of the intracellular liberation of hydrochloric acid as the mechanism of action is consistent with the known facts of the pathology of mustard gas. Its skin lesion resembles hydrochloric acid burns. Many of the war gases can readily yield an acid by hydrolysis. The toxicity of dimethylsulphate may thus be due to an intracellular liberation of sulphuric acid. The ideal mode of treatment would seem to lie in the use of a basic substance having solubilities and penetrating power like that of mustard gas, but yielding a base on hydrolysis so as to neutralize the acid formed by the war gas. Fortunately, there is no longer need for haste in the search for a perfect antidote of this sort.

1. Lynch, Vernon; Smith, H. W., and Marshall, E. K., Jr.: On Dichlorethylsulphide (Mustard Gas), I, The Systemic Effects and Mechanism of Action, J. Pharmacol. & Exper. Therap. **12**: 265 (Dec.) 1918.

2. Lillie, R. S.; Clowes, G. H. A., and Chambers, R.: Preliminary Report of Experiments on the Action of Dichloroethylsulfide (Mustard Gas) on the Cells of Marine Organisms, Science **49**: 382 (April 18) 1919

OXIDATION IN THE BODY

The answer to the question as to how the all important oxidations in the body are brought about is almost as obscure today as it was a hundred years ago when this mode of energy transformation in the animal organism was first being discussed. Not long ago, in touching on this perplexing subject, reference was made to the view, recently championed by several physiologists, that an enzyme (catalase) having the property of liberating oxygen from peroxids is principally responsible for oxidation in the body.[1] The justification for this contention has been derived essentially from comparisons of the catalase content of the blood in conditions differing essentially in the extent of the oxidative changes that may be assumed to be associated with them. For example, food and exercise promote oxidative metabolism in the organism; the catalase content of the blood was reported to be correspondingly augmented. The association of cause and effect is a mode of reasoning by analogy—always a somewhat doubtful procedure in science; hence the following comment in THE JOURNAL:

> There is a tendency to quote such statements without a due recognition of the limitations to our knowledge contained in them. It is one thing to observe the liberation of oxygen from peroxid in a test tube under the influence of a tissue extract or fluid; quite another problem is concerned in connecting such experimental facts with the complexities of reaction demanded by the known conditions of tissue oxidation. The mechanism of the latter remains, now as before, obscure and a subject for explanation.

In his latest contribution to this subject, Burge,[2] of the University of Illinois, the foremost advocate of the hypothesis that "the increase in oxidation produced by the ingestion of food as in other ways is due to an increase in catalase," has cited further physiologic parallelisms in support of it. In various communications regarding what they term the metabolic gradient underlying intestinal peristalsis, Alvarez and Stark-

1. Oxidation in the Body, editorial, J. A. M. A. **71**: 1316 (Oct. 19) 1918.

2. Burge, W. E.: The Reason for the Specific Dynamic Action of Protein, Am. J. Physiol. **48**: 133 (March) 1919.

weather,[3] of the University of California, have offered evidence that the catalase content of muscle and of mucous membrane per unit of weight is found to be graded from duodenum to ileum. Here again we can behold an instance of a striking parallelism between muscular performance, rhythmicity and irritability on the one hand, and the presence of catalase on the other.

The California investigators actually mention their data as "proof" for the view that the catalase content of a tissue is an index to its metabolic activity. It would assuredly be a fortunate circumstance to possess a suitable method for estimating with great accuracy the oxidative capacity of an organ or tissue in some simpler way than that now afforded by the measurement of respiratory or gaseous exchange. However, accuracy and dependability are a primary desideratum in any procedure of this sort. It is from this standpoint, rather than because of the obscure theoretical basis of the assertion that catalytic power is a measure of the metabolic activity of a tissue, that Becht,[4] of the Department of Pharmacology at the Northwestern University, Chicago, has attacked the thesis. He insists, on the basis of his own experimental researches, that no method has yet been devised which adequately measures the catalytic power of a solid organ. Becht has observed 1,000 per cent. variations in the bloods of different animals under identical conditions, and wide variations in the bloods of animals of different species.

With respect to the effect of thyroid feeding which unquestionably profoundly affects the metabolic performances of the organism, the different observers are by no means in accord. In contrast to Burge,[5] Becht maintains that there is a reduction in the catalytic power of blood during thyroid feeding; this is true not only for the whole blood but for each corpuscle also. Thus, he says, increased catalytic power of the blood cannot explain the loss of flesh during thyroid feeding, either because of the increased oxidation of material in the blood stream, or because of increased loss of catalase to the blood by the tissues, resulting in overactivity of the autolytic ferments, normally held in check by catalase.

Since the catalytic power of the blood varies between such enormously wide limits, from 100 per cent. to 1,000 per cent. in animals of the same species under the same conditions, Becht concludes that the catalases cannot be particularly important, and he does not believe that a study of catalases can possibly explain the mysteries of the processes of oxidation. Wherefore we may reiterate our earlier comment[1] that the mechanism of oxidation remains, now as before, obscure and a subject for explanation.

3. Alvarez, W. C., and Starkweather, Esther: Am. J. Physiol. **46**: 186 (June) 1918; **47**: 60, 67 (Sept.) 1918.
4. Becht, F. C.: Observations on the Catalytic Power of Blood and Solid Tissue, Am. J. Physiol. **48**: 171 (March) 1919.
5. Burge, W. E.: The Effect of Phosphorus Poisoning on the Catalase Content of the Tissues, Am. J. Physiol. **43**: 545 (July) 1917.

Current Comment

THE PREFERABLE LOW-CALORY DIETS FOR DIABETICS

In calling attention to the voluminous contributions to our knowledge of the intermediary metabolism of proteins, fats and carbohydrates which have been made in the study of diabetes, Graham Lusk has remarked that the work done is prophetic of possible accomplishment along scientific lines in the study of disease. "It is typical," he adds, "of that 'scientific medicine' which affrights the spirits devoted to a passing empiricism." Enlightened by the newer progress, the chemical pathologist has begun to see in the more severe forms of diabetes not only an incapacity of the organism to care for sugar in the normal fashion but also a more or less pronounced inability to metabolize properly the other foodstuffs that are essential to nutrition. Thus, to quote Lusk again, in the worst picture of the perverted metabolism of diabetes, sugar cannot burn, fat burns only as far as beta-oxybutyric acid; and as for protein, a part of the amino-acids are converted into sugar and another part into beta-oxybutyric acid, neither of which can be burned. For many years fat was the one unrestricted food of diabetics. Some clinicians pushed its use to the limit of endurance in order to keep up the weight of the diabetic patient. It is now understood, however, that liberal ingestion of fat may create or increase ketonuria in both normal and diabetic persons. Although persons may develop a capacity to live on a protein-fat diet free from carbohydrate, the danger of overtaxing the assimilative powers of an organism subjected to it are beginning to be recognized. F. M. Allen,[1] in particular, has given prominence to the menace of overfeeding with fat or of obesity for the diabetic. Allen has succeeding in imitating in dogs the appearance of the spontaneous downward progress observed in human patients. From elaborate studies on both man and animals, he believes it to be conclusively demonstrated that the attempt at high nutrition, even with fat, produces in these dogs an appearance of spontaneous aggravation of condition as striking as anything witnessed in human patients, and that this result can be prevented, at least for periods of years, by limiting the total caloric intake and the body mass to correspond to the assimilative function. The experience with diabetic dogs warns unmistakably against efforts to maintain patients on a luxus level of diet or weight. As Allen says, restriction of single foods, as carbohydrate or protein, suppresses symptoms temporarily; but lightening the total load on the weakened assimilative function is the only present means by which it may be hoped actually to halt the diabetic process. It has lately been argued by Mosenthal and Clausen[2] that probably the lowest diet that will conserve the physical and mental efficiency of the diabetic is that which maintains the nitrogen equilibrium of the patient.

1. Allen, F. M.: The Rôle of Fat in Diabetes, The Harvey Lectures, Series XII, 1916-1917, Philadelphia, J. B. Lippincott Company, p. 42.
2. Mosenthal, H. O., and Clausen, S. W.: The Maintenance Diet in Diabetes Mellitus as Determined by the Nitrogen Equilibrium, Arch. Int. Med. **21**: 269 (Feb.) 1918.

This was alleged to be attainable on a carbohydrate-free diet by a food intake of from 1,500 to 2,000 calories, the variations usually depending on the size and the sex of the patient. No attempts were made to determine which of the ingredients of a starch-free dietary, fat, protein or alcohol, was the most efficient protein sparer. A more recent study of diabetic patients in the Medical Clinic of the Johns Hopkins Hospital by Mosenthal and Harrop[3] gives some intimation of the relative values at stake. The cases were only of moderate severity. The outcome, controlled by careful chemical examinations, shows that the addition of an equal number of calories of protein, fat or alcohol to a low-calory carbohydrate-free diet in cases of diabetes mellitus results in the assimilation of considerable amounts of nitrogen when the protein is used, a favorable nitrogen balance in only occasional instances with fat, and no change in the nitrogen equilibrium when alcohol is given. In the opinion of Mosenthal and Harrop, this would point to a high protein diet as the most advisable low-calory, carbohydrate-free diet by which to conserve the body tissues and furnish a maintenance ration for the diabetic.

THE EARLY HISTORY OF MEXICAN TYPHUS (TABARDILLO)

In the City of Mexico few persons are so well known among the scientific people as is Dr. Nicolás León, professor of physical anthropology in the National Museum of Archeology there. Through his visit to this country, some years ago, Dr. León became known to a few for his excellent work in anthropometry and medical history. His "History of Obstetrics in Mexico" down to the year 1910, a book of 740 pages, is a highly original work, based on his own researches and replete with interesting pictures from the Aztec hieroglyphs and the older Catholic publications. His recent papers on the history of Mexican medicine in the *Gáceta Médica de México* are scholarly and exhaustive. Mexico was a kind of pioneer in medicine in the New World. The first hospital in this hemisphere was built by Cortez in the City of Mexico in 1524; the first chair of medicine was established in the University of Mexico about 1578-1580 (THE JOURNAL, Oct. 10, 1908). Haller's bibliographies show that the first medical books to be printed in the New World were the "Opera Medicinalia" of Francisco Bravo (Mexico, 1570) and the "Summa y Recopilación de Cirugía" of Alphonso López (Mexico, 1578); the first medical periodical (Dr. León shows) was the "Mercurio Volante" (Mexico, Oct. 17, 1772). In spite of his age and of many losses sustained during the recent revolution, Dr. León has continued his excellent work, as shown by his interesting contribution[4] to the Congreso nacional del tabardillo (Mexico, Jan, 14-21, 1919) on the history of tabardillo or typhus fever which Humboldt, in his American Travels of 1799-1804, noted as existent in Mexico in 1576. Dr. León considers the etymologies of two Aztec words of the nahuatl idiom, viz., *matlazahuatl* and *cocoliztli*. Briefly *matlazahuatl* (*matlatl*, mesh, *zahuatl*, eruption) is the Aztec name for the tableland disease noted by Humboldt; *cocoliztli* (from *cocoa*, to be sick), also employed by the Aztecs as a synonym for tabardillo, would appear to be a general term for an epidemic or plague. Tabardillo (a little cloak) was the expression employed by the Spaniards for typhus as it appeared after the siege of Granada in 1489. The earlier Mexican accounts of tabardillo are to be found in the two books of Bravo (1570) and López (1578) mentioned above. Strange to say, there are no copies of either Bravo or López to be found in Mexico at the present time; both books are exceedingly rare. Another work in manuscript on the epidemic of tabardillo in 1576 by Francisco Hernández "De Morbo Novae Hispanae anni 1576, vocato ab Indiis Cocoliztli") was destroyed in the burning of the Escorial in 1671. Dr. León bases his findings on a medical treatise ("Tractado breve de Medicina") by Friar Agustín Farfán (Mexico, 1592). Here tabardillo is described as a continuous fever with an exanthem (*pintas*), the semeiology being an elaborated casuistry based on the old doctrine of the humors and the treatment "profuse and reiterated bloodletting," with a long list of vegetable remedies. Except in the title, the word *cocoliztli* is not found anywhere in this book. The many Mexican medical authors of subsequent date, cited by León, say substantially the same thing, with more or less prolixity, and nothing new is added prior to the treatises of Anacleto Rodríguez Argüelles (1811) and Luis Montaña (1813). Here the symptomatology is given in greater detail and the nature of the disease becomes more recognizable. The first Mexican epidemic of typhus, in historic time, occurred in the year 1519. Dr. León concludes with a graphic account of the sixth epidemic (1576) by an eye-witness (evidently from an old public document). The effect of the epidemic on the population of the Mexican capital is sensed in the reproduction which Dr. León gives of a painting by the artist P. Miranda, which is strongly suggestive of the illustrations of the horrors of yellow fever in some of our earlier American books.

ONE REASON SCIENTIFIC MEDICINE LAGS

It is a medical journal—so the cover declares—and according to the title page is "the Official Organ of the Mississippi Valley Medical Association, and the Ohio Valley Medical Association." It is said to circulate "among the most progressive physicians of the Middle West." The magazine is well printed, on a fair grade of paper and of neat, if not elaborate, typographic make-up. The advertising (other than that relating to the journal itself) occupies fourteen and one-half pages, or, omitting "reading notices," thirteen pages. More than three fourths of these pages are devoted to advertising proprietary medicines, twenty in all. Eighteen of these proprietaries have been the subject of adverse reports, fifteen by the Council on Pharmacy and Chemistry and three by THE JOURNAL. Inci-

3. Mosenthal, H. O., and Harrop, G. A.: The Comparative Food Value of Protein, Fat and Alcohol in Diabetes Mellitus as Measured by the Nitrogen Equilibrium, Arch Int. Med. **22**: 750 (Dec.) 1918.

4. León, Nicolás: ¿Qué era el Matlazahuatl y qué el Cocoliztli en los tiempos precolombinos y en la época hispana? Mexico, 1919.

dentally, not one of the four articles—readable and worth while—that comprise the "Original Contribution" department is original. Each has been "lifted" from some other source. This, however, by the way, for good articles are a scarce commodity. Just what excuse can be offered for this publication in its present form—and similar publications, for it is but a type—it is difficult to see. It presumes to represent the medical profession, but its only apparent reason for being is as a medium for advertising products, the bulk of which disgrace medicine and degrade therapeutics. These facts are few but discouraging. They furnish at least one explanation — possibly more — for the lukewarm attitude of some manufacturers of proprietary remedies toward the work of the Council on Pharmacy and Chemistry.

DUODENAL DIABETES—AN EXPLODED FALLACY

The introduction of the expression "duodenal diabetes" into the literature of medicine is due to the late German physiologist Eduard Pflüger[1] of Bonn. Having observed that section of the intramesenteric nervous connections between the pancreas and duodenum in the frog may, under certain circumstances, give rise to a glycosuria, he called into question the existence of a pancreatic diabetes. Minkowski subsequently silenced this charge against what had been regarded as an established demonstration, by a successful experimental extirpation of the duodenum without producing a state of diabetes so long as a portion of pancreatic tissue was left intact in the body. Duodenectomy is, however, a dangerous procedure; and, since scarcely any cases of prolonged survival of the subjects are on record, the possibility that the duodenum is indispensable for physiologic wellbeing has remained to be definitely considered. Thanks to the ingenious operative procedure described by Moorhead and Landes in a recent issue of THE JOURNAL,[2] complete removal of the duodenum in consecutive operations is permitted. The jejunum is made to serve as a substitute for the duodenum and to receive the pancreatic and biliary secretions through transplanted ducts. The experiments made by the authors at the University of Chicago show that "dogs thus operated on will live in a normal state of health. The duodenum, therefore, is not essential to life." The outcome reminds us of the comment of von Fürth of Vienna on the subject of duodenal diabetes: "Strictly speaking, nothing at all has been gained in this whole campaign fought with an array of heavy artillery of authority and between strategists of note, except the reestablishment of a fact that has long been known—the influence of nervous irritations of all sorts causes the liver to discharge its supply of carbohydrate which sometimes gives rise to glycosuria."[3]

1. Pflüger, E.: Arch. f. d. ges. Physiol **106**: 181, 1905; **118**: 265, 267, 1907; **119**: 227, 297, 1907; **122**: 267, 1908; **123**: 323, 1908; **124**: 1, 529, 632, 1908; **128**: 125, 1909.
2. Moorhead, J. J., and Landes, H. E.: Duodenectomy: A New Method, J. A. M. A. **72**: 1127 (April 19) 1919.
3. Von Fürth, Otto: The Problems of Physiological and Pathological Chemistry of Metabolism, translated by Allen J. Smith, Philadelphia, G. B. Lippincott Company, 1916, p. 251.

THE HEALTH OF THE ARMY

Statistics published this week in the "Medical Mobilization and the War" department show that the Medical Department of the Army established an enviable record during the war. The yardstick with which to measure the work of this department is the effective list, and the record shows that, on an average, 94.3 per cent. of our army were effective for duty; of the remaining 5.7 per cent., only 3.4 per cent. were on the noneffective list because of disease. The medical corps of an army is put to its hardest test when it follows the army into action. The total number of American soldiers wounded was 195,000, of whom the Medical Corps saved the lives of 182,000; of these there are but few who carry empty sleeves or use artificial legs. And so the figures go: a venereal disease rate lower than that of any of the Allied or enemy forces; typhoid fever practically eliminated, and a rate from even the dread scourge pneumonia that was less than might have been expected under the conditions.

Association News

THE ATLANTIC CITY SESSION

Information Regarding Hotels

Representatives of the Hotel Committee of the Atlantic City Committee of Arrangement will be at the railroad stations in Atlantic City where they may be consulted by Fellows and guests of the Association who have not made their hotel arrangements. Hotel information also will be available at the place of registration, Music Hall on the Steel Pier. The Local Committee of Arrangements gives assurance that there will be no difficulty whatever in securing comfortable hotel accommodations.

Medical Mobilization and the War

Personnel of the Medical Department

For the week ending May 31, there were 15,306 officers in the Medical Corps, a decrease of 491 from the previous week. The Medical Reserve Corps contained 1,961 officers. The total number of medical officers discharged since the beginning of the war is 17,024.

U. S. Army Found Healthiest in History of War

In a modest quarter of Tours in a house built in the 16th century are the sick and wounded records of the American Army—4,300,000 cards that show the health, the wounds, the diseases, the deaths and the recoveries in the American Army. Ninety-four and three-tenths per cent. of the Yank Army was effective for duty at all times, and of the 5.7 per cent. on the noneffective list, only 3.4 per cent. were so rendered by disease. Of the 195,000 Americans wounded, the Medical Corps saved the lives of 182,000.

To date there have been 72,723 deaths in the A. E. F., of which 32,392 were out on the "high field rendezvous," 13,420 of wounds and battle causes, 22,205 of diseases, and 4,806 of accidents and other causes. The venereal rate has been decidedly the lowest of any of the allied or enemy armies, varying from 57 to 34 a year for each thousand of its men, and averaging less than 40 as a whole. Typhoid, which used to be the great scourge of armies, played a very insignificant part in the battle between disease and the American army. There have been only about 1,000 cases altogether and less than half a hundred deaths. Pneumonia replaced it as the

most dreaded of diseases. At the time of the armistice, there had been about 8,000 deaths from this disease and influenza in the A. E. F. Epidemic dysentery, although causing only a very few deaths, at one time pervaded our fighting forces to a serious extent.

In the A. E. F. there were 15,690 officers, 8,587 nurses and 122,473 enlisted men of the Medical Corps; 153 base hospitals, 66 camp hospitals, and 12 convalescent camps. We had 193,000 beds on Nov. 11, 1918, capable of an emergency expansion to 276,000 in case of need. The program of procurement and construction would have assured us by this time of 423,700 beds and an emergency expansion of all kinds of edifices.

Mortality Statistics of the Army

The following figures as to deaths in the United States Army are not absolutely definite, but are subject to some corrections:

ALL TROOPS IN THE UNITED STATES SEPT. 1, 1917, TO MAY 2, 1919

Average strength 1,130,052

	Number of Deaths	Annual Rate per 1,000
All causes	34,729	18.369
External causes	1,552	0.821
Suicides	207	0.110
Other external causes	1,344	0.711
Wounds received in action	1	0.000
Disease only	33,177	17.548
Pneumonia	27,074	14.320
Meningitis	1,190	0.629
Typhoid fever	51	0.003
Tuberculosis	760	0.401
Dysentery	17	0.001
Measles	89	0.005
Scarlet fever	88	0.005
Empyema	361	0.191
Septicemia	172	0.091
Influenza	1,1877	0.627
Other diseases	2,188	1.157

AMERICAN EXPEDITIONARY FORCES, FRANCE, OCT. 18, 1917, TO MAY 2, 1919

Average strength 991,344

	Number of Deaths	Annual Rate per 1,000
All causes	62,205	40.78
External causes	45,970	30.14
Suicides	36	0.023
Wounds received in action	44,056	28.887
Other external causes	1,878	1.232
Disease only	16,235	10.64
Pneumonia	12,661	8.301
Meningitis	947	0.621
Typhoid fever	162	0.106
Tuberculosis	460	0.302
Dysentery	25	0.016
Measles	30	0.020
Scarlet fever	79	0.052
Empyema	136	0.089
Septicemia	112	0.074
Influenza	209	0.137
Other diseases	1,414	0.927

ALL TROOPS IN THE UNITED STATES, SEPT. 1, 1917, TO MAY 1, 1919, PLUS ALL TROOPS IN THE AMERICAN EXPEDITIONARY FORCES, FRANCE, OCT. 18, 1917, TO MAY 2, 1919

Average strength 2,121,396

	Number of Deaths	Annual Rate per 1,000
All causes	96,934	28.849
External causes	47,522	14.525
Wounds received in action	44,057	13.501
Suicides	243	0.007
Other external causes	3,222	0.955
Disease only	49,412	14.324
Pneumonia	39,735	11.509
Meningitis	2,137	0.625
Typhoid fever	213	0.064
Tuberculosis	1,220	0.263
Dysentery	42	0.001
Measles	119	0.034
Scarlet fever	167	0.049
Empyema	497	0.143
Septicemia	284	0.083
Influenza	1,396	0.398
Other diseases	3,602	1.050

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ALABAMA

Gadsden—Ralls, A. W. (C.)
Mobile—Agnew, J. H. (M.)
Ramer—Athey, C. R. (L.)
Selma—Skinner, M. (C.)

ARIZONA

Miami—Slaughter, T. H. (L.)

ARKANSAS

Fort Smith—Hoge, A. F. (L.)

CALIFORNIA

Berkeley—Betts, I. H. (L.)
Dixon—Morrison, H. E. (C.)
Fowler—Ehlers, H. (L.)
Los Angeles—Bowen, F. P. (C.)
Gallagher, H. M. (L.)
Phillips, C. E. (M.)
Shelton, B. (C.)
Pasadena—Murray, H. W. (C.)
Riverside—McPheeters, G. C. H. (M.)

COLORADO

Central City — Ashbaugh G. A. (L.)
Denver—Carmody, T. E. (M.)
Pueblo—Thompson, J. W. (L.)
Trinidad—Chisholm, A. J. (C.)

CONNECTICUT

Bridgeport—Adams, F. J. (M.)
Colebrook—Horrax, G. (M.)
Hartford—Deming, C. D. (L.)
Kircher, R. F. A. (C.)
Marbledale—Denslow, M. H. (L.)
New Haven — Comford, C. W., Jr. (M.)
Romford—Harvey, S. C. (M.)

DISTRICT OF COLUMBIA

Washington — Littlepage, W. H. (L. C.)
Mallory, W. J. (C.)

FLORIDA

St. Petersburg—Knowlton, R. H. (L.)

GEORGIA

Atlanta—Carter, H. G. (L.)
Douglas—Sibbett, W. A. (L.)
Marshallville — Frederick, D. B. (C.)

ILLINOIS

Alton—Robertson, A. P. (L.)
Chicago—Carter, T. A. (L.)
Copeland, N. (L.)
Eisenstaedt, J. S. (L.)
Gibson, W. S. (C.)
Koch, S. L. (M.)
Lebowitz, J. J. (C.)
McArthur, S. W. (C.)
Nadler, W. H. (M.)
Rice, W. P. (C.)
Sieweth, W. S. (L.)
Silver, M. J. (L.)
Weisskopf, M. A. (C.)
Woodard, H. B. (M.)
Danville—Bird, J. T. B. (C.)
Elgin—Walsh, J. J. (L.)
Evanston—Woodyatt, R. T. (M.)
Freeport—Stealy, C. L. (C.)
Leland—Chapman, W. E. (C.)
Lexington—Lindsay, C. E. (C.)
Marshall—Bradley, S. C. (C.)
Oak Park — Trowbridge, C. W. (L.)
Peoria—Pintler, H. E. (C.)
Quincy—Eaton, R. W. (C.)
Stevenson, W. D. (C.)
Toulon—Chase, M. R. (M.)

INDIANA

Elkhart—Work, J. A., Jr. (C.)
Fort Wayne—Bruggeman, H. O. (L. C.)
Indianapolis — Doeppers, W. A. (L.)
Van Osdol, H. A. (C.)
Richmond—Fouts, J. M. (C.)

IOWA

Cedar Rapids — Olmsted, W. H. (L.)
Davenport—Schroeder, P. H. (C.)
Dubuque—Bock, A. V. (M.)
Garner—Bemis, G. A. (C.)
Greeley—Kresensky, W. W. A. (L.)
Keokuk—Gray, H. A. (M.)
Pella—Sybenga, J. J. (L.)
Sioux City—Swanson, J. E. (C.)
Spirit Lake — Geissinger, J. D. (C.)
Troy—Prentice, G. L. (C.)

KANSAS

Concordia—Weaver, R. E. (C.)
Ellinwood—Wheeler, L. J. (L.)
Freeport—Mills, C. D. (L.)
Mulvane—Shelly, H. G. (C.)
Newton—Glover, H. M. (C.)
Parsons—Crump, T. E. (L.)
Salina—Fitzpatrick, C. M. (C.)
Topeka—Miller, R. J. (L.)
Washington—Smith, H. D. (M.)

LOUISIANA

New Orleans—Terhune, W. B., Jr. (L.)
Oakdale—Palmer, A. T. (L.)

MAINE

Guilford—Dore, G. E. (L.)
South Windham—Whitney, H. R. (L.)
Swans Island—Fuller, A. J. (L.)

MARYLAND

Baltimore—Benson, E. H. (C.)
Galvin, T. K. (L.)
Queenstown—Price, S. J. (L.)
Raspeburg—Wilkinson, A. L. (L.)

MASSACHUSETTS

Athol—Gleason, B. W. (C.)
Belmont—Cunningham, E. A. (C.)
Boston—Green, M. C. (L.)
Lane, J. W. (L. C.)
Lee, W. T. (M.)
Nielsen, E. B. (M.)
Fall River — Blanchette, W. H. (L.)
Gloucester — Malonson, J. H. (C.)
Greenfield—Canedy, C. F. (C.)
Harding—McPherson, G. E. (M.)
Malden—McCarthy, E. J. (C.)
Newton—Dempsey, J. E. (L.)
Quincy—Jones, F. E. (L. C.)
Springfield—Gilcrest, J. M. (L.)
Worcester—Oberg, F. T. (L.)

MICHIGAN

Detroit—Erkfitz, A. W. (L.)
Foden, G. S. (M.)
Lovering, W. J. (L.)
Poston, H. P. (L.)
Rohde, P. C. (C.)
Grand Rapids — Hodgen, J. T. (M.)
Smith, A. B. (C.)
Mount Clemens — Martin, C. A. (L.)
Stanwood—Campbell, J. B. (C.)

MINNESOTA

Gilbert—Barrett, F. (C.)
Lewisville—Barickman, R. I. (L.)
Minneapolis—Macnie, J. S. (C.)
Rochester—Melson, O. C. (C.)
Sutton, G. E. (C.)
St. Paul—Engberg, E. J. (C.)
Winona—Lindsay, W. V. (M.)
Winsted—Clair, J. B. (L.)

MISSISSIPPI

Corinth—Caldwell, G. A. (C.)
Hattiesburg—Lewis, H. S. (M.)

MISSOURI

Kansas City—George, J. H. (C.)
LaRue, H. M. (C.)
Leonard, A. C. (L.)
Weaver, J. S. (C.)
Kennett—McKay, J. C. (L.)
St. Louis—Clopton, M. B. (L. C.)
Coughlin, W. T. (L. C.)
Ernst, E. C. (M.)
Fisher, R. F. (C.)
Gilbert, W. W. (M.)
Kopelowitz, J. C. (L.)
Lehman, E. P. (L.)
Stewart, J. E. (L.)
Sullivan—Eyermann, C. H. (C.)

MONTANA

Butte—Loring, F. W. (C.)
Red Lodge — Brinkman, W. F. (C.)

NEBRASKA

Lincoln—Breuer, M. J. (L.)
Covey, G. W. (L.)
Walker, G. H. (C.)
Omaha—Bridges, E. L. (M.)

Omaha—Hull, C. A. (M.)
Riggert, L. O. (C.)
Pickrell—Sigler, M. T. (L.)

NEW HAMPSHIRE

Dover—Chapman, E. L. (L.)
East Jaffrey—Sweeney, F. C. (C.)
Manchester—Jones, E. A. (L.)
Lovely, B. H. (C.)

NEW JERSEY

Cedar Grove—Payne, G. (C.)
Englewood—Bell, A. L. L. (L.)
Passaic—Szymanski, J. J. (L.)
South Orange—Albee, G. C. (M.)
Trenton—Reddan, M. W. (M.)

NEW YORK

Bridgehampton—Gilbert, E. C. (C.)
Bronx—Grad, I. (L.)
Brooklyn—Goodfellow, E. H. (L.)
Walker, A. A. (L.)
Buffalo—Frost, C. G. (L.)
Lackawanna—Robinson, R. (L.)
Lockport—Hurlbut, L. R. (M.)
Lyndonville—Fraser, D. E. (C.)
New Rochelle—Beck, A. L. (C.)
New York—Carroll, W. E. (L.)
Handleman, W. M. (L.)
Hansen, E. (M.)
Hunt, J. R. (M.)
Jameson, J. W. (L. C.)
Lane, M. P. (M.)
Lopez de la Rosa, I. (L.)
McEvoety, C. L. (L.)
Morton, J. J. (M.)
O'Connell, W. M. (L.)
Richer, O. H. (L.)
Salmon, T. W. (Col.)
Stern, E. (L.)
Urdang, J. (L.)
West, D. (C.)
Niagara Falls—Talbot, F. J. (C.)
Rochester—Orchard, N. G. (C.)
Rosenthal, S. H. (M.)
Utica—Grant, A. R. (M.)
Yonkers—Paterson, D. C. (C.)

NORTH CAROLINA

Jonesboro—McIver, E. M. (L.)
New Bern—Lupton, C. H. (L.)
Rutherfordton — Scruggs, W. M. (C.)
Walnut Cove—Jones, B. N. (C.)
Wilmington—Bullock, E. S. (L.)

NORTH DAKOTA

Cavalier—Short, C. A. (C.)
Grafton—Glaspel, C. J. (C.)
Hazleton—Monteith, G. (L.)
Park River — Robertson, C. W. (L.)

OHIO

Akron—Grim, J. (C.)
Cincinnati—Gillespie, W. (L. C.)
Lindenberger, L. N. (C.)
Lippert, A. B. (C.)
Columbus—Denser, C. H. (C.)
Eckstrom, J. B. C. (M.)
Faulder, G. B. (C.)
Dayton—Roush, F. W. (C.)
East Liverpool — Davis, F. F. (L.)
Fostoria—Henry, C. A., Jr. (C.)
Hamilton—Rogers, W. N. (C.)
Lima—Herr, A. H. (C.)
Toledo—Andrews, S. B. (L.)
Girardot, A. J. (M.)
Levison, L. A. (C.)
Van Wert—Church, C. G. (C.)
Woodstock—Sharp, W. H. (L.)

OKLAHOMA

Balko—Stout, W. (L.)
Chandler—Bisbee, W. G. (C.)
Claremore—Means, J. F. (L.)
Oklahoma City — Bolend, R. G. (M.)
Howard, R. M. (M.)
Ponca City—Newlon, B. F. (L.)

OREGON

Portland—Blackford, H. (L.)
Greene, H. M. (M.)
Watkins, R. E. (L.)

PENNSYLVANIA

Clearfield—Stewart, L. F. (C.)
Erie—Weibel, E. G. (C.)
Harrisburg—Dapp, G. A. (L.)
McDonald—Stewart, W. S. (C.)
Monaca—McKinley, A. S. (L.)
Monessen—Gemmill, W. P. (L.)
Philadelphia — Benedict, F. D. (L.)
Pittsburgh — Buchanan, E. P. (L.)
Kenney, H. F. (L.)
Simon, D. L. (L.)
Reading—Shearer, W. L. (L.)
Ridgeway—Shaw, W. C. (C.)
Sweet Valley—Rummage, L. C. (L.)
Vandergrift Heights — Copeland, W. A. (C.)

SOUTH CAROLINA

Charleston—Miller, T. E., Jr. (C.)
Elk Point—Henkin, J. (C.)

TENNESSEE

Chattanooga—DeLay, E. M. (L.)
Dyersburg—Motley, R. L., Jr. (L.)
Memphis—Jetton, M. M. (L.)
Nashville — Billington, R. W. (M.)
Pickens, D. R. (C.)

TEXAS

Ballinger—Love, A. S. (C.)
Celina—Hailey, E. L. (L.)
Dallas—Ford, J. F. (C.)
Shortal, W. W. (C.)
Houston—Murray, E. C. (L.)
Lufkin—Hawkins, J. W. (C.)
New Braunfels—Wright, R. (C.)
Oakwood—Carter, C. J., Jr. (L.)

VIRGINIA

Abingdon—Litchfield, G. V. (C.)
Hampton—Parker, P. J. (M.)
Hemp—Patton, H. W. (L.)
Mathews—Hoskins, R. R. (C.)
Petersburg—Nisbet, J. I. (L.)

WASHINGTON

Hoquiam—Hurley, G. I. (C.)
Olympia—Partlow, K. L. (C.)
Ridgefield—Stryker, R. S. (M.)
Spokane — Eikenbary, C. F. (L. C.)
Uniontown—Burg, W. A. (C.)

WEST VIRGINIA

Ellenboro—Corbin, E. A. (L.)
Montgomery—Hodge, O. W. (L.)

WISCONSIN

Ashland—Harrison, G. W. (L.)
Merrill—Ravn, E. O. (C.)
Milwaukee—Nelson, J. D. (L.)
Winnebago—Rowley, C. C. (C.)

MISSOURI

Kansas City—Calloway, L. M.
St. Louis—Lavan, J. L.

NEBRASKA

Lincoln—Delzell, W. R.

NEW JERSEY

Jersey City—Enright, J. G.

NEW YORK

Kings Park—Patiky, J. G.
New York—Messing, A.

OHIO

Toledo—McNierney, F. B.

OREGON

Portland—Landis, R. P.

PENNSYLVANIA

Adah—Brown, H. S.
Philadelphia—Best, P. W.
Cleveland, F. M.
Doebele, W. A.
Gorman, L. R.
Righter, H. M.
Thomas, G. A.
Scranton—O'Malley, W. J.

SOUTH CAROLINA

Hyman—Finklea, O. T.

VIRGINIA

Hopewell—Hertzberg, H.

WASHINGTON

Seattle—Lea, J. M.
Maxson, F. T.
McCurdy, R. J.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Los Angeles—Fearon, W. M.
Langan, A. J.
San Diego—Wier, T. F.
San Francisco—Ashmore, F.
Cline, G. W.
Hund, E. J.
McNulty, A. H.
Santa Rosa—Herrick, A. B.

DISTRICT OF COLUMBIA

Washington—Langhorne, C. D.

GEORGIA

Atlanta—Ratliffe, J. W.
Waycross—Lott, W. M.

ILLINOIS

Chicago—Emery, C. E.
Healy, M. E.
Rock Island—Frey, H.
Sandwich—Wallace, J. H.

KANSAS

Sublette—Miner, O. W. M.

KENTUCKY

Madisonville—Thompson, A. L.

LOUISIANA

New Orleans—Ward, R. R.

MARYLAND

Baltimore—Baldwin, A., Jr.

MASSACHUSETTS

Chelsea—Loewe, W. R.
Hatfield—Hubbard, R. E.
Indian Orchard—Riordan, A. H.

MICHIGAN

Detroit—Hulbert, H. S.
Palm, G. W.

MINNESOTA

Lake Park—Snell, A. M.
Minneapolis—McCarthy, D.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Army Medical School for instruction, from Camp Custer, Capt. R. D. BROWN, Mobile.

To Fort McPherson, Ga., from Camp Dix, Lieut. F. W. YOUNG, Hartford.

California

To Camp Kearney, Calif., camp hospital, from Fort Sill, Lieut. R. A. CARTER, Los Angeles.

To Camp Zachary Taylor, Ky., from Fort Riley, Lieut. H. W. SPIERS, Los Angeles.

To Denver, Colo., from Camp Lewis, Capt. D. R. SMITH, Talmage; from Whipple Barracks, Major O. D. ANDERSON, Ocean Park.

To Fort Des Moines, Iowa, from Camp Kearney, Lieut. H. J. WRIGHT, San Francisco.

To Fort Sheridan, Ill., from Camp Kearney, Major C. E. SISSON, Norwalk.

To Hoboken, N. J., from San Francisco, Major W. M. ARCHER, Jr.

To report to the commanding general, American Expeditionary Forces, from Camp Kearney, Lieut.-Col. H. P. CARTER. Western Department, from Camp Kearney, Major E. L. WEMPLE, San Francisco.

To San Francisco, Calif., Letterman General Hospital from Charlestown, Major L. F. LUCKIE, Los Angeles.

Colorado

To Denver, Colo., from Camp Kearney, Major G. E. ORSBORN, Denver.

To Newport News, Va., Major P. WORK, Pueblo.

Connecticut

To Fox Hills, N. Y., from Colonia, Lieut. R. C. PAINE, Thompson.

Delaware

To Eastview, N. Y., from Camp Upton, Lieut. J. G. SPACKMAN, Wilmington.

District of Columbia

To New Haven, Conn., from Surgeon-General's Office, Capt. E. L. COOK.

Florida

To Baltimore, Md., from Atlanta, Capt. J. F. WILSON, Lakeland.

To report to the commanding general, Hawaiian Department, from Camp Meigs, Lieut. W. L. NUTTER, Lake Worth. Northeastern Department, from Camp Upton, Major J. D. GRIFFIN, Lakeland.

Georgia

To Camp Benning, Ga., from Camp Dix, Lieut. L. W. SHAW, Savannah.

To report to the commanding general, Hawaiian Department, from Camp Gordon, Capt. H. L. CONNER.

Idaho

To report to the commanding general, Central Department, from Fort Riley, Major W. H. TUKEY, Emmett.

Illinois

To Camp Dix, N. J., from Fort Riley, Lieut. C. M. BACON, Chicago.

To Camp Meade, Md., from Fox Hills, Capt. G. U. LIPSHULCH, Chicago.

To Chicago, Ill., from Otisville, Capt. R. H. HENDERSON, Chicago.

To Fort Sheridan, Ill., from Camp Bowie, Lieut. C. H. WIENEKE, Chicago; from Camp Lee, Lieut. H. SERED, Chicago; from Lakewood, Lieut. D. C. SUTTON, Chicago; from Washington, D. C., Major E. A. GRAHAM, Chicago.

To Fox Hills, N. Y., from Williamsbridge, Capt. G. C. TALLERDAY, Chicago.

To Hampton, Va., from Fort McPherson, Lieut. D. D. CAMPBELL, Chicago.

To Hoboken, N. J., Capts. E. O. BROWN, Clayton; S. H. RICHMAN, Oak Forest.

To Otsen, N. C., from Boston, Lieut. I. PILOT, Chicago.

To Otisville, N. Y., from Camp Upton, Capt. W. J. RIDEOUT, Freeport.

To Walter Reed General Hospital, D. C., from Hoboken, Lieut. S. S. SCHOCHET, Chicago.

Indiana

To Biltmore, N. C., from Camp Dodge, Lieut. F. A. KIMBLE, Anderson.

To Cooperstown, N. Y., from Fort McHenry, Lieut. B. J. PETERS, Kokomo.

Kansas

To Biltmore, N. C., from Fort Oglethorpe, Lieut. J. RUDBECK, Seneca.

To Camp Grant, Ill., from Camp Bowie, Lieut. O. O. MOORE, Topeka.
To Fort D. A. Russell, Wyo., from Fort Riley, Capt. J. M. SUTTON, Lincoln.
To Fort Sill, Okla., from Fort Riley, Lieut. C. H. SMITH, Pittsburg.
To report to the commanding general, Southern Department, from Camp Dix, Major J. E. HEWITT, Wakefield.
To Walter Reed General Hospital, D. C., from Camp Dix, Capt. J. W. SPEARING, Norcatur.

Kentucky

To Camp Shelby, Miss., as tuberculosis examiner, from New Haven, Capt. V. A. HARL, Owensboro.

Louisiana

To Camp Meade, Md., from Walter Reed General Hospital, Lieut. R. S. KEMP, New Orleans.
To Spartanburg, S. C., from Camp Bowie, Capt. S. O. TURNER, De Ridder.

Maine

To Fox Hills, N. Y., from Fort McPherson, Capt. D. B. CRAGIN, Waterville.

Maryland

To Army Medical School, from Camp Meade, Lieut.-Col. H. C. PILLSBURY.
To report to the commanding general, American Expeditionary Forces, from Colonia, Lieut. D. F. ELMENDORF, Baltimore. From Fort McHenry, Major C. L. BEAVEN.
To Walter Reed General Hospital, D. C., from Camp Dix, Lieut. J. T. KING, Jr., Baltimore.
To Washington, D. C., Surgeon-General's Office, from Camp Shelby, Miss., Lieut. L. P. HOLMES, Baltimore.

Massachusetts

To Cape May, N. J., from Lakewood, Lieut. T. B. RAFFERTY, Lynn.
To East Norfolk, Mass., from Lakewood, Capt. S. F. CURRAN; Lieut. T. E. BUCKMAN, Boston.
To Eastview, N. Y., from Camp Dix, Lieut. G. A. BUCKLEY, Brockton.
To Fox Hills, N. Y., from Camp Upton, Capt. R. H. SIMMONS, Fall River; from Fort McHenry, Lieut. J. G. HEGARTY, Boston.

Michigan

To Hoboken, N. J., Capt. A. W. GHOREYEB, Boston.
To Camp Abraham Eustis, Va., camp hospital, from Biltmore, Capt. R. P. STARK, Allegan.
To Camp Custer, Mich., from Detroit, Lieut. L. B. COWEN, Detroit.
To Camp Sherman, Ohio, from Detroit, Lieut. I. I. BITTKER, Detroit.

Minnesota

To Denver, Colo., from Camp Dodge, Capt. F. W. SPICER, Duluth.
To Fort Snelling, Minn., from Camp Lee, Capt. P. A. HIGBEE, Minneapolis.

Missouri

To Camp Grant, Ill., base hospital, from Camp Shelby, Capt. A. S. HEITHAUS, St. Louis.
To Camp Zachary Taylor, Ky., base hospital, from Fort Snelling, Lieut. V. S. DANGERFIELD, Luray.
To Eastview, N. J., from New Haven, Lieut. B. W. LEWIS, St. Louis.
To Fort D. A. Russell, Wyo., from Fort Riley, Capt. F. COHEN, Kansas City.
To St. Louis, Mo., from Camp Bowie, Capt. F. J. SULLIVAN, St. Louis; from Camp Dix, Lieut. J. C. ROTTER, St. Louis.
The following order has been revoked: *To Fort Riley*, from Plattsburg Barracks, Capt. H. M. LaRUE, Kansas City.

Montana

To Camp Grant, Ill., from Camp Lewis, Capt. B. P. BLACKSTONE, Lindsay.

Nebraska

To Fort Riley, from Camp Dix, Capt. J. J. HOMPES, Lincoln.
The following order has been revoked: *To Camp Dodge, Iowa*, base hospital, for instruction, Lieut. O. H. HAHN, Hastings.

New Hampshire

To Camp Devens, Mass., from Camp Zachary Taylor, Major A. F. WHEAT, Manchester.

New Jersey

To Camp Dix, N. J., as cardiovascular and tuberculosis examiner, from Camp Upton, Lieut. A. A. MUTTER, Arlington.
To Camp Meade, Md., as camp surgeon, from Camp Dix, Col. J. B. HUGGINS.
To Eastview, N. Y., from Colonia, Lieut. G. W. FINKE, Hackensack.
To Fort Monroe, Va., from Lakewood, Col. C. F. MASON.
To Governors Island, N. Y., from San Francisco, Lieut. R. R. REED, Morristown.
To Hampton, Va., from Camp Meade, Lieut. W. G. SHEMELEY, Jr., Camden.
To New Haven, Conn., from Camp Dix, Capt. E. H. HOWELL.
To report to the commanding general, American Expeditionary Forces, from Colonia, Lieut.-Col. C. L. GANDY. Hawaiian Department, from Northeastern Department, Major C. L. VREELAND, Pompton Lakes.

New Mexico

To Camp Meade, Md., from Spartanburg, Capt. S. H. ECKLES, Silver City.

New York

To Biltmore, N. C., from Camp Jackson, Lieut. H. COWAN, New York.
To Camp A. A. Humphreys, Va., from Quantico, Va., Lieut. O. N. LaROTONDA, New York.
To Camp Custer, Mich., from Fort McHenry, Capt. W. G. BOWERMAN, New York.
To Camp Devens, Mass., from Colonia, Lieut. A. B. PEMSLER, New York. Base hospital, from Camp Meade, Lieut. I. S. STARTZ, New York; from Camp Upton, Lieut.-Col. J. M. SWAN, Rochester.
To Camp Dix, N. J., from Fort Riley, Lieuts. F. C. BALDERREY, Ithaca; J. F. LEWIS, New York.
To Camp Dodge, Iowa, base hospital, from Boston, Lieut. F. W. PALMER, Buffalo.
To Camp Grant, Ill., from Camp Upton, Lieut. C. G. IRISH, New York.
To Camp Lee, Va., from Camp Upton, Lieut. W. F. C. STEINBUGLER, Brooklyn.
To Fort McHenry, Md., from Camp Pike, Lieut.-Col. J. H. McHENRY, New York.
To Fox Hills, N. Y., from Camp Dix, Lieut. R. C. LOWRY, New York.
To Hoboken, N. J., from Williamsbridge, Major W. P. DAVENPORT.
To Mineola, N. Y., for instruction, as flight surgeon, from Camp Devens, Lieut. J. F. BOURKE, Jamaica.
To Pittsburgh, Pa., from Lakewood, Lieut. A. R. SHIRLEY, New York.
To Walter Reed General Hospital, D. C., from Rochester, Lieut. W. D. GILL, New York.
The following orders have been revoked: *To Camp Sherman, Ohio*, base hospital, from Camp Dix, Capt. W. J. TRACY, Hornell. *To Detroit, Mich.*, from Camp Jackson, Capt. H. A. GRIFFIN, New York. *To Fort Des Moines, Iowa*, from Camp Dix, Lieut. J. L. LINN, Brooklyn. *To Hoboken, N. J.*, from Camp Sherman, Lieut. H. J. FEASTER, Brooklyn.

North Carolina

To Oteen, N. C., from Camp Jackson, Major R. A. CAMPBELL, Statesville.
To report to the commanding general, Southeastern Department, from Camp Wadsworth, Capt. R. W. SPICER, Goldsboro.
The following order has been revoked: *To Camp Grant, Ill.*, base hospital, from Camp Dix, Capt. L. F. MAGRUDER, Albemarle.

Ohio

To Camp Kearney, Calif., as camp surgeon, from Toledo, Lieut.-Col. G. H. McCLELLAN.
To Camp Sherman, Ohio, from Camp Dodge, Major A. H. DUNN, Chillicothe; from Cincinnati, Capt. A. E. OSMOND, Cincinnati. Base hospital, from Camp Custer, Lieut. E. D. JACKSON, Georgetown; from Camp Dix, Capt. L. N. OSSMAN, Cleveland.
To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Lieut. S. F. HAUSER, Cincinnati.
To Fort Thomas, Ky., as cardiovascular and tuberculosis examiner, from Camp Upton, Lieut. H. B. WEISS, Cincinnati.
To report to the commanding general, Southern Department, from Oglethorpe, Lieut. T. W. MAHONEY, Springfield.

Oklahoma

To Fort Sill, Okla., from Camp Dix, Lieut. C. N. BERRY, Norman.
To Indianapolis, Ind., from Fort Sill, Lieut. S. G. ODOM.

Oregon

To Eastview, N. Y., from Camp Dix, Capt. G. L. HYNSON, Portland.
To Hoboken, N. J., from San Francisco, Capt. W. C. MUNLY, Portland.

Pennsylvania

To Camp Dix, N. J., base hospital, from Boston, Capt. J. A. BROOKE, Philadelphia; from Lakewood, Capt. J. H. GALBRAITH, Altoona.
To Camp Jackson, S. C., from Lakewood, Lieut. R. GOODMAN, Philadelphia.
To Camp Meade, Md., from Camp Travis, Lieut. S. W. REEVES, Fawn Grove.
To Carlisle, Pa., from Camp Jackson, Major S. S. BURG, Northumberland.
To Colonia, N. J., from Walter Reed General Hospital, Major C. C. YOUNT, Philadelphia.
To Hampton, Va., from Fort McPherson, Capt. G. P. ARD, Woodward.
To Hoboken, N. J., from Carlisle, Major D. N. W. GRANT.
To Oteen, N. C., from New Haven, Lieut. J. K. ANDERSON, Pittsburgh.
To Pittsburgh, Pa., from Lakewood, Lieut. J. W. MITCHELL, Pittsburgh.
To report to the commanding general, Eastern Department, from Camp Dix, Capt. R. H. KING, Pittsburgh. Philippine Department, from Camp A. A. Humphreys, Capt. S. H. HELLER, Lancaster.
To Walter Reed General Hospital, D. C., from Camp Dix, Capt. P. B. STEELL, Pittsburgh; from Lakewood, Lieut L. N. GAY, Shamokin. For instruction, from Camp Devens, Lieut. P. L. COOK, Philadelphia.

South Carolina

To Camp Gordon, Ga., base hospital, from Camp Sherman, Lieut. H. H. HARRIS, Anderson.

South Dakota

To Camp Meade, Md., from Western Department, Major A. M. GIFFIN, Rapid City.

Tennessee

To Fort Riley, base hospital, from Camp Lee, Capt. J. E. LACY, Jasper.
To Hoboken, N. J., from Camp Dix, Lieut. J. C. BLANKENSHIP, Halls.
To New Haven, Conn., from Camp Jackson, Major A. S. DABNEY, Nashville.

Texas

To Camp Dodge, Iowa, base hospital, from Fort Snelling, Capt. C. F. CLAYTON, Lubbock.
To Camp Travis, Texas, to examine the command for nervous and mental disease and on completion *to Fort Sam Houston, Texas*, base hospital, from Fort McPherson, Lieut. D. C. BURKES, San Antonio.
To Fort Bayard, N. M., from Camp Dix, Capt. W. A. VEE CASH, Abilene.
To Fort Bliss, Texas, from Camp Bowie, Major H. CLARK, Crowell.
To Fort D. A. Russell, Wyo., as tuberculosis examiner, from Denver, Lieut. C. R. GOWEN, Carlsbad.
To Fort Sam Houston, Texas, from Camp Dix, Lieut. J. W. GOODE, San Antonio; from Camp Lee, Capt. L. E. McADON, San Antonio; from Camp Travis, Lieut. C. M. COVINGTON, Montgomery.
To Hoboken, N. J., from Newport News, Lieut. L. S. JOHNSON, Richmond.

To report to the commanding general, Southern Department, from Camp Bowie, Capt. D. C. WYLIE, Asperton.

Virginia

To Camp Lee Va., from Camp Dix, Major A. T. FINCH, Chase City.
To Eastview, N. Y., from Lakewood, Lieut. J. W. ROBERTSON, Onancock.
To Washington, D. C., Surgeon General's Office, from Philadelphia, Major J. W. H. POLLARD, Lexington.

Washington

The following orders have been revoked: *To Fort D. A. Russell, Wyo.*, from Camp Lewis, Lieut. H. J. HARDS, Tacoma. *To Fort Des Moines, Iowa*, from Camp Dix, Lieut. H. T. BUCKNER, Seattle.

Wisconsin

To Camp Grant, Ill., as tuberculosis examiner, from Camp Lewis, Lieut. L. F. RUSCHHAUPT, Milwaukee.
To Camp Meade, Md., from Dover, Capt. P. L. SCANLAN, Prairie du Chien.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Marriage Law in Effect.—The new law requiring all men seeking marriage licenses to undergo a physical examination within fifteen days before the issue of the license went into effect, April 21.

Hospital Items.—The Pike County Masonic Hospital has been incorporated at Troy with a capital stock of $40,000. A lot at Pine and Walnut Streets, donated by Fox Henderson & Sons, will be used for the site of the hospital.——The Fraternal Hospital, Birmingham, has been incorporated with a capital stock of $50,000.——At a special meeting of the Memorial Hospital Committee, Montgomery, held April 21, it was decided to raise $200,000 for the erection of a city hospital to be called the Montgomery Memorial Hospital. Of the amount needed, $85,000 has already been secured.

ARKANSAS

Personal.—Dr. Francis T. Isbell, Horatio, retiring president of the state board of medical examiners of the Arkansas Medical Society, was presented with a silver loving cup by the members of the board, May 14.——Dr. Charles A. Arkebauer, Little Rock, senior surgeon of the State Hospital for Nervous Diseases, Little Rock, has been appointed assistant superintendent, to succeed Dr. Roland F. Darnall, who has resigned.——Drs. James G. Townsend and Morgan Smith have been elected members of the board of health of Little Rock.—— Dr. Aaron A. McKelvey, Fort Smith, has been elected district health officer by the district board of health. ——Dr. Fred C. Rowell has been elected city physician of Pine Bluff.——Drs. William C. Russwurm and Aris W. Cox have been appointed members of the board of governors of the Helena Hospital.——Dr. Percy A. Riddler has been appointed a member of the Fort Smith District Board of Health.

CALIFORNIA

Tax Refund.—Senate Bill No. 405, introduced by Senator Sharkey of Martinez, has been passed by the legislature and signed by the governor. This act authorizes the stated board of medical examiners to refund taxes, fees and penalties collected by mistake, error, or inadvertence, and provides an appropriation therefor. The provisions of this bill become effective ninety days after the adjournment of the legislature. The attorney-general has rendered an opinion permitting the board of medical examiners to exempt from payment of the $2 annual tax thoses licentiates who gave their services to the national government during the recent war as commissioned medical officers in the U. S. Army, Navy or Public Health Service. Such licentiates are exempt from payment of this charge while in the discharge of their official duties. If a licentiate was connected with any of these services from January 1 of one year to January 1 of the succeeding year he is exempt from the tax, but in the event that during a portion of any year the licentiate was not so connected, he is liable for the tax. Proof of exemptions for tax or claims for refund will be sufficient if the licentiate forward to the board of medical examiners an affidavit containing a copy of his appointment and discharge, further substantiated by the statement of the exact date of service and termination thereof, with rank at date of discharge or the statement that he is still on active duty.

CONNECTICUT

Personal.—Leonard W. Bacon, Major, M. C., U. S. Army, New Haven, has recently been made chief of the orthopedic service of U. S. Army General Hospital No. 32, Chicago.

New County Society Officers.—Litchfield County Medical Association at its one hundred and fifty-fifth annual meeting held in Waterbury, April 23, elected Dr. Charles H. Turkington, Litchfield, president; Dr. Frederick William Wersebe, Washington, vice president, and reelected Dr. Harry B. Hanchett, Torrington, secretary-treasurer.—— Windham County Medical Society at its twelfth annual meeting held in Hartford, April 18, elected Dr. Joseph A. Girouard, Willimantic, president; Dr. Arthur A. Chase, Plainfield, vice president, and Dr. Arthur D. Marsh, Hampton, secretary-treasurer.——Tolland County Medical Society at its annual meeting elected Dr. William L. Higgins, South Coventry, president; Dr. Alonzo L. Hurd, Somers, vice president, and Dr. Frederick W. Walsh, Rockville, secretary-treasurer.——Fairfield County Medical Society at its one hundred and twenty-seventh annual meeting held in South Norwalk, April 15, elected Dr. George R. R. Hertzberg, Stamford, president; Dr. Eli B. Ives, Bridgeport, vice president; Dr. Charles W. Gardner, Bridgeport, secretary, and Dr. Henry B. Lambert, treasurer.——Hartford County Medical Association at its annual meeting, held April 1, elected Dr. Thomas H. Weldon, South Manchester, president; Dr. Amos T. Harrington, Hartford, vice president, and Dr. Patrick F. McPartland, Hartford, secretary-treasurer.

DELAWARE

New Health Board Officers.—At the annual meeting of the Dover Board of Health, Dr. L. August H. Bishop was elected president, and Dr. Edwin S. Anderson, vice president.

Governor Approves Bill.—Governor Townsend has approved bills recently passed by the legislature requiring physicians practicing in hospitals as interns, to register with the secretary of the medical council, and relative to reporting and placarding diseases dangerous to public health.

DISTRICT OF COLUMBIA

Building for Medical Society.—Plans have been completed for a drive for two weeks to raise a fund of $100,000 to be used for the erection of a suitable home for the Medical Society of the District of Columbia. The site for this home has already been purchased on M Street, near Connecticut Avenue. The plans provide for a stone and brick structure, two stories and basement in height, to contain two auditoriums, office rooms, etc. Dr. William Gerry Morgan is president of the society and Dr. Edward Y. Davidson is chairman of the building committee.

FLORIDA

New State Officers.—At the forty-sixth annual meeting of the Florida Medical Association, held in Miami, May 20 to 22, under the presidency of Dr. Frederic J. Walter, Daytona, that city was selected as the place of meeting for 1920, and the following officers were elected: president, Dr. William E. Ross, Jacksonville; vice presidents, Drs. Henry C. Babcock, Miami, George A. Davis, De Land, and John A. Simmons, Arcadia.

Personal.—At the annual meeting of the St. Luke's Hospital Association, Jacksonville, April 15, Dr. Jay H. Durkee was elected president.——Herrman H. Harris, Major, M. C., U. S. Army, Jacksonville, who is in charge of a base hospital in Verdun, has been commissioned lieutenant-colonel in the medical corps.——Dr. Joseph Y. Porter, Jacksonville, has been elected honorary vice president of the Florida Anti-Tuberculosis Association.——Drs. Carroll H. Frink, Mirian Mullholland, Joseph Y. Porter, and George H. Gwynn, Tallahassee, have been elected directors of the Florida Anti-Tuberculosis Association, and Dr. Van H. Gwinne, Tallahassee, has been elected a member of the executive committee of the organization.

GEORGIA

Personal.—Dr. Charles H. Watt, Thomasville, has been appointed resident surgeon and Dr. Virgil P. W. Sydenstricker, Decatur, resident physician at the University Hos-

pital, Augusta.——Frank K. Boland, Lieut.-Col., M. C., U. S. Army, Atlanta, who served in France with the Emory Hospital Unit, and later was on duty at Fort McPherson, Ga., has been discharged from the service.

License Revoked.—The supreme court of Georgia recently handed down its decision to the effect that the revocation of the license of William Hancock Lewis, Carrollton, was legal. Lewis contended that the law under which his license was revoked cannot constitutionally be applied in his case. A conviction in Haralson County on a charge of larceny after trust is said to be the ground on which the state medical board revoked his license.

ILLINOIS

Chiropractor Arrested.—Mr. R. D. McKown, a chiropractor of Atlanta, Ill., was arrested by the Department of Registration and Education of the State of Illinois for practicing his profession without a state license.

Tent Hospital for Tuberculous Children.—Because of hospital bed shortage in Chicago, tents for 1,000 tuberculous children have been erected at the Municipal Tuberculosis Sanitarium, Chicago, by order of the health commissioner.

Eye, Ear, Nose and Throat Men Elect Officers.—At the annual meeting of the Ilinois State Medical Society held in Peoria, the eye, ear, nose and throat section elected Dr. Frank Allport, Chicago, president, and Dr. Charles F. Burkhardt, Effingham, secretary.

Opening Lecture of Summer Session.—The opening lecture of the graduate summer quarter in medical sciences at the University of Illinois, College of Medicine, will be delivered by Michael F. Guyer, Ph.D., professor of zoology, University of Wisconsin, on "The transmission of eye-defects induced in rabbits by means of lens-sensitized fowl-serum," Monday, June 9, at 1 p. m.

Personal.—Dr. George F. Suker, Chicago, has returned from military service and resumed practice.——Herman H. Tuttle, Lieut.-Col., M. C., U. S. Army, Springfield, sanitary inspector of the Thirty-Third Division, returned with the division from France.——Lewis Wine Bremerman, Lieut.-Col., M. C., U. S. Army, Chicago, who recently returned from France, has been directed to present a report to the government urging the adoption of a plan of universal military training for the benefit of the young men of the country.——Charles H. Parkes, Capt., M. C., U. S. Army, Chicago, on duty overseas, has been promoted to Major, M. C.——Dr. Camillo Volini and Antonio Lagorio, Chicago, have been made chevalier knights of the Crown of Italy by King Victor Emanuel on account of their services given in war relief.——James A. Harvey, Lieut.-Col., M. C., U. S. Army, commanding officer of Base Hospital No. 84, returned from abroad with the Rainbow Division.

KANSAS

Personal.—Dr. Lydia Allen DeVilbiss, Topeka, director of child hygiene of the state board of health, has resigned to take postgraduate work and to lecture.——Dr. Jacob J. Entz, Hillsboro, has been elected president of the Kansas State Health Officers' Association.

New State Officers.—At the thirty-fifth annual meeting of the Kansas Medical Society held in Ottawa, May 7 and 8, it was announced by Dr. William S. Lindsay, Topeka, that 645 of the 1,400 members of the association have been officers in the service of the United States during the war, and resolutions were adopted endorsing the campaign being waged by the state board of health and especially that part which provides for the facilities for diagnosis and treatment of venereal disease, calling on all physicians of the state to cooperate with the health authorities in their efforts to combat venereal diseases, and urging local authorities to provide for the establishment of cooperation in the state board of health. The following officers were elected: president, Dr. Elmer E. Liggett, Oswego; treasurer, Dr. Lewis H. Munn, Topeka, and secretary, Dr. John F. Hassig, Kansas City.

MICHIGAN

New State Officers.—At the annual meeting of the Michigan State Medical Society, held in Bay City, May 21 and 22, the following officers were elected: president, Dr. Charles H. Baker, Bay City; vice presidents, Drs. Angus McLean, Detroit, Charles N. Sowers, Benton Harbor, Herbert E. Randall, Flint and Peter D. MacNaughton, Calumet. Kalamazoo was selected as the place of meeting for 1920.

MINNESOTA

Preventorium Planned.—The proposed Range Tuberculosis Preventorium will be built on the shores of Esquagama Lake, near Biwabik, where it is proposed to establish a fifty-five-bed hospital.

New Officers.—At the annual meeting of the Range Medical Society held in Virginia, May 14, Dr. Charles B. Lenont, Virginia, was elected president, Dr. Charles W. Bray, Biwabik, vice president, and Dr. William M. Empie, Virginia, was reelected secretary.

Southern Minnesota Association Meeting.—The headquarters of the Southern Minnesota Medical Association, which convenes at Rochester, June 23 and 24, will be at Armory Hall instead of at Hotel Zumbro. A complete list of operations will be published and available at the Armory Hall, at 8 o'clock each morning. The midsummer banquet will be held at the Armory Hall, June 23, at which the members and their ladies will be the guests of Drs. William J. and Charles H. Mayo. The address of the president of the association is "John Williams, Lake Crystal," and not "Rochester," as previously announced. Dr. Antoine Depage, La Panne, Belgium, will appear on the scientific program following the banquet, June 23.

NEW YORK

Small Fee Stimulates Reporting of Communicable Disease.—The township of Islip, L. I., has been successful in stimulating a more efficient reporting of communicable disease by observing the law authorizing the payment of 25 cents to physicians for each case that is reported. Islip, with a population of 20,000, paid twelve physicians $640 during 1918, or an average of $53 to each physician. The payment of this sum of money has also served to call public attention to the importance of the work of the health officer.

Health Department Empowered to Mark Drug Addicts.—Health Commissioner Dr. Royal S. Copeland has been advised by the corporation counsel, William P. Burr, that the board of health has power to make certain changes in the sanitary code relating to the control, identification and classification of drug addicts. After receiving this notification, Dr. Copeland stated that he would immediately go ahead with the health department's program. The form of identification cards to be used has already been determined on and a conference has been held with the police authorities concerning the method of registering and identifying addicts.

Personal.—Dr. Isaac W. Brewer, Geneva, formerly sanitary supervisor in the New York State Department of Health, has been appointed full-time health officer of Watertown, as a result of a competitive examination. The salary is $3,500.——Dr. Hermann M. Biggs, New York, state commissioner of health, has returned from the meeting of the International Red Cross Society in France.——Dr. Edward S. Godfrey, Albany, epidemiologist in the division of communicable diseases in the New York State Department of Health, who has been chief of the health inspection service of the American Red Cross in France, has returned.

Statewide Campaign Against Tuberculosis.—The New York State Department of Health and the Tuberculosis Committee of the Charities Aid Association have planned to cooperate in a statewide campaign against tuberculosis. Thirty-four counties will institute free clinics for the examination of those who have recently become affected with tuberculosis or who have been exposed. Members of the staffs of the tuberculosis sanatoriums will participate in the work. The reason for this vigorous campaign is that there has been an increase in tuberculosis since the influenza epidemic last autumn. Some localities have already established clinics. At Plattsburg such clinics will be held on the second and fourth Thursdays of each month for the present year.

New York City

Personal.—Professor Pedro Chutro of Buenos Aires, who served during the war at Buffon Hospital, Paris, is operating at the Polyclinic Hospital, having come to this country on the invitation of the United States government to demonstrate his method of bone grafting.——Dr. Marion M. Crawford will head the second unit of women physicians, dentists, nurses and motor drivers, now being organized for relief work in Serbia. The unit expects to sail before July 1.

Medical School Closes.—At a recent meeting of the Board of Trustees of Fordham University, it was decided to discontinue the medical department of Fordham University, owing to lack of funds necessary to maintain a first class medical school. The Fordham University School of Medi-

cine has been in existence for fifteen years, and has always shown an annual deficit of considerable proportions. There has been no endowment fund of any kind for the medical school. An effort will be made to secure an endowment fund, and if it proves successful the school will be reopened. There are at present 297 students in the school, sixty-eight of whom will be graduated this month.

Further Opposition to Compulsory Health Insurance.—The Medical Society of the County of New York, at its stated meeting, May 26, passed resolutions approving of the instructions against compulsory health insurance given by the House of Delegates of the Medical Society of the State of New York to its delegates to the House of Delegates of the American Medical Association, and confirmed these instructions to such of the members of the House of Delegates of the American Medical Association as are members of the Medical Society of the County of New York. Vigorous opposition to compulsory health insurance was voiced by most of the speakers at a meeting of the social insurance department of the National Civic Federation, May 24. Among the arguments urged against compulsory health insurance were that it had proved a failure in Germany and Great Britain; that it had greatly increased malingering, and that it had not produced any decrease in the death rate.

NORTH CAROLINA

Personal.—Dr. David A. Stanton has been elected mayor of High Point.——Dr. Andrew J. Warren, Salisbury, has been designated as assistant secretary of the state board of health.——Mr. H. E. Miller has been appointed chief of the sanitary engineering in the state board of health, succeeding Mr. W. H. Booker.——Dr. Charles W. Armstrong, Troy, has been appointed whole-time health officer for Rowan County.——Dr. G. A. Roberts, V. S., Raleigh, for twelve years head of the department of veterinary medicine in the state college, has resigned to become veterinarian in the hygienic laboratory of the medical school at São Paulo, Brazil.——Dr. Buxton B. Williams has been reelected superintendent of public health of Greensboro.

OHIO

State Medical Association Meeting.—At the seventy-third annual meeting of the Ohio State Medical Association, held in Columbus, May 6 to 8, the following officers were elected: president, Dr. James F. Baldwin, Columbus; president-elect, Dr. Charles Lukens, Toledo; secretary, Dr. Herbert M. Platter, Columbus (reelected). Toledo was selected as the next place of meeting.

Personal.—John D. O'Brien, Lieut.-Col., M. C., U. S. Army, Canton, arrived in America, May 23, after twelve months' service in France, and will resume practice in Canton.——Dr. Ward I. Huber, Cleveland, was attacked by holdup men, May 16, and received several stab wounds of the head, neck and shoulders.——Dr. John M. Anderson, Greenville, has been appointed division surgeon of the Pennsylvania System between Columbus and Indianapolis.

Cincinnati

Personal.—Dr. Carey P. McCord, formerly in charge of camp sanitation and disease prevention at Camp Sherman, Chillicothe, has accepted the position of director of the newly created department of industrial medicine and public health connected with the University of Cincinnati.

OKLAHOMA

Personal.—Dr. Lewis E. Emanuel, Chickasha, health officer of Grady County, who is at present on duty in France, has been appointed a member of the state board of medical examiners.——Dr. Allen G. T. Childers, Mulhall, has been appointed health officer of Logan County to succeed Dr. Clarence S. Petty, Guthrie.

War Officers' Organization.—A state organization of medical men who took part in the World War was formed, May 20, at the annual meeting of the Oklahoma State Medical Association, with an initial membership of 125. Dr. Leonard S. Willour, McAlester, was elected president; Dr. Samuel J. Fryer, Muskogee, secretary, and Dr. Rex G. Bolend, Oklahoma City, treasurer.

Hospital Association Formed.—At a luncheon given at Muskogee, May 21, the Oklahoma State Hospital Association was organized. The association will work in conjunction with the state medical association and will hold its meetings at the same time and place. The object of the organization is the standardization of hospial service. The following officers were elected: president, Dr. Fred S. Clinton, Tulsa; vice presidents, Drs. John A. Hatchett, El Reno, and Arthur S. Risser, Blackwell; secretary, Paul R. Fesler, Oklahoma City, and treasurer, Dr. Sessler Hoss, Muskogee.

PENNSYLVANIA

Protective Association Organized.—At the meeting of the Physicians' Protective Association held in Buckingham, May 9, Dr. Fred C. Emery, Fox Chase, was elected president; Dr. Alfred E. Fretz, Sellersville, vice president; Dr. Elwood T. Quinn, Jenkintown, secretary, and Dr. Levi S. Walton, Jenkintown, treasurer.

Philadelphia

Belgian Surgeons at College of Physicians.—Prof. Antoine Depage and Capt. Van De Velde, surgeons to the Ambulance de l'Océan at La Panne, Belgium, addressed a special meeting of the College of Physicians, June 6, on 'Contributions to the Progress in Surgery during the War."

Personal.—Cheney M. Stimson, Major, M. C., U. S. Army, who served with Base Hospital No. 82 at Toul, France, arrived at Newport News, May 24.——Charles A. E. Codman, Major, M. C., U. S. Army, who has been placed in charge of Base Hospital No. 104, the Beau Desert Hospital centered near Bordeaux, has been promoted to the rank of lieutenant colonel, Medical Corps.——Dr. Daniel J. McCarthy, lieut-col., M. C., U. S. Army, recently discharged, has been appointed chief medical director of St. Agnes Hospital.——Dr. John A. White has been appointed resident physician in the bureau of charities, and J. M. Fruchter, outdoor physician.

TEXAS

Personal.—Leslie C. Frank, Sanitary Engineer, U. S. P. H. S., has been appointed director of public health of Dallas.——Mrs. Frances E. Sullivan, Smithsville, has been appointed a bureau director in the state health department.

Health Officers Organize.—May 14, a conference of health officers of the state was held in Waco, over which Dr. Charles W. Goddard, Holland, state health officer, presided, and an association was organized to be known as the Texas Health Officers' Association, with Dr. Goddard as president, and Dr. Oscar Davis, Anderson, as secretary.

TENNESSEE

New Laboratory Building.—The board of trustees of the University of Tennessee voted $100,000 to the medical school to be used for a new laboratory building to be erected in the rear of the Memphis City Hospital. The new building will have laboratories for pathology, bacteriology, chemistry and physiology.

New Dean at Memphis.—Dr. Leverett D. Bristol, a few days ago was elected dean and professor of bacteriology and public health of the University of Tennessee College of Medicine, Memphis. Dr. Bristol is a graduate in science from Wesleyan University, Connecticut, and a graduate in medicine from Johns Hopkins University. His previous teaching experience has been at Syracuse University College of Medicine, Syracuse, New York; University of Minnesota, Minneapolis, and the University of North Dakota.

WISCONSIN

County Dispensary Opened.—A free medical dispensary is to be opened by Milwaukee County in the Sachs Building, Milwaukee, and the county board has appropriated $30,000 for the maintenance of the institution.

Child Welfare Stations Opened.—The deputy commissioner of health of Milwaukee announces the opening of eight new child welfare stations making a total of fourteen in the city. To these stations parents are urged to bring their children, under school age, for medical treatment.

New County Hospital Plans.—The new Milwaukee County Hospital which is to be erected at Twenty-Fourth and Grand Avenue, Milwaukee, will cost about $1,000,000, and will have accommodations for 500 patients. Plans are being so prepared as to permit the construction of such additional units as may be required.

Personal.—Dr. Carroll D. Partridge, laboratory director of the Milwaukee Health Department, has been appointed full-time health officer of Wausau.——Dr. Fred B. Welch has

been appointed health officer of Janesville to succeed Dr. Samuel B. Buckmaster, who had served in that position for fifteen years.——Dr. William E. White has been elected president of the Burlington Public Health Association.——Dr. John L. Callahan has been elected president of the La Crosse Board of Health.

Health Bills.—Among the bills either fully enacted or having passed both houses of legislature are the following: making influenza a reportable disease; authorizing local health boards to order closed schools, churches, theaters and public assemblages for the control of epidemics; legalizing delayed vital records; classing chancroid as a venereal disease; requiring every municipality to establish one or more public comfort stations; creating a department of occupational therapy at county tuberculosis sanatoriums; authorizing counties having county sanatoriums to provide outpatient departments to encourage follow-up activities; prohibiting use of vehicles for purposes of prostitution (a measure for venereal disease control).

CANADA

Dominion Department of Health.—The bill for the creation of a Dominion of Canada Department of Health has been put through the committee stage of the senate without undergoing any substantial amendments.

New "Patent Medicine" Law.—Canada is enacting a new "patent medicine" law which will provide that every "patent" or proprietary medicine must be known by a number and that the manufacturers must obtain an annual license. There will also be appointed in connection with this law an advisory board. Dr. Manion, M.P., advised that the word "cure" should be debarred from all "patent medicine" advertisements.

Inspection of Schoolchildren in Ontario.—There is to be a general inspection of schoolchildren of the Province of Ontario under the direction of the minister of education. Doctors and nurses to carry on this work have been appointed, which, it is believed, will not be completed before the expiration of one year or possibly even two years. A dental inspection will be made at the same time. The inspection will be to a large extent a rural and small town survey. Most of the cities and larger towns have had medical and dental inspections of varying thoroughness.

Ontario Medical Association.—At the annual meeting of the Ontario Medical Association in Toronto, May 28, 29 and 30, Sir St. Clair Thompson, London, England, in addition to reading a paper on "Shakespeare in Medicine," spoke at the annual banquet on postgraduate work in England referring to the establishment of a fellowship in medicine, which would enable medical men in Canada to take advantage of those courses in special work. Dr. Frederick W. Marlow, Toronto, was elected president; Dr. James H. Mullin, Hamilton, vice president, and Dr. Thomas C. Routley, Toronto, secretary.

Inquiries of Ministry.—In reply to inquiries made by Dr. C. A. Gauvreau from Tamiscouata, Que., the government states that it is not its intention during the present session to pass a measure respecting "patent medicines," repealing the act now enforced, that the intention of the government is efficaciously to inspect the preparation and sale of "patent medicines" which contain basic properties of copious doses of alcohol and ingredients to produce abortion, and that it is proposed by the government to establish a board qualified to pronounce finally on the character of "patent medicines" as regards the content of alcohol and their toxicity.

Canadian Public Health Association.—At the annual convention of the Canadian Public Health Association with the health officers of Ontario, held in Toronto, May 26 and 27, the following officers were elected: president, Dr. Henry E. Young, Victoria, B. C.; vice presidents, Dr. John A. Amyot, Toronto, Dr. William F. Roberts, St. John, N. B., and secretary, Dr. Robert D. Defries, Toronto. The meeting in 1920 will be held in Edmonton, Alta. The most important item of business was the passing of a resolution favoring the manufacture of arsphenamin by the provincial boards of health, and urging the federal government either to make the products themselves or to allow other companies to manufacture them in Canada.

Control of Venereal Disease.—Another conference of representatives of the different health boards in Canada was held in Ottawa, May 30, at the call of the Dominion government. Major-Gen. John T. Fotheringham presided. A Canadian National Council for combating venereal diseases was formed, and Mr. Justice Riddell, Toronto, was named as permanent chairman. All provincial governments will be asked to cooperate with this council for the suppression of social vices in Canada; and its activities will arrange themselves under four heads: education, recreation, medical treatment and law enforcement. Major Jason S. Joy, head of the Commission on Training Camp Activities of the United States, was present and gave valuable advice as to Canadian propaganda and work. It is proposed to establish clinics throughout Canada where cheap or free arsenical products may be procured.

LATIN AMERICA

Deaths in the Profession.—Dr. **Francisco Zayas y Jiménez,** dean of the medical profession in Cuba, successful in scientific agriculture and known also for his poetry.——Dr. **H. D'Achardi,** one of the most promising young physicians of Bogotá, Colombia.

Personal.—The *Repertorio de Medicina y Cirugía* of Bogotá states that Dr. J. Vargas Suárez has been appointed by the government *adjunto ad honorem* at the Legation of Colombia at Washington. During his absence the chair of internal pathology of which he is the incumbent will be temporarily filled by Dr. Juan N. Corpas.

GENERAL

Eye and Ear Men to Meet.—The Pacific Coast Oto-Ophthalmological Society will hold its annual meeting at St. Francis Hotel, San Francisco, August 4 to 6. The secretary of the association is Dr. Aaron S. Green, Shreve Building, San Francisco.

Hospitals for Near East.—The American Women's Hospitals is sending a fully equipped hospital unit to Serbia and another to Palestine. Each of these units will have a mobile hospital with fifty beds, sixteen motor ambulances, with drivers, in addition to the requisite number of doctors and nurses.

New Chairman of Health and Quarantine Committee.—Senator Joseph I. France, Baltimore, is to be the new chairman of the senate committee on public health and quarantine, succeeding Senator Joseph E. Ransdell of Louisiana. Senator France is a graduate of the Baltimore College of Physicians and Surgeons and was secretary of the Medical and Chirurgical Faculty of Maryland in 1916.

Southeastern Sanitarians Meet.—At the annual meeting of the Southeastern Sanitary Association held in Rome, the second week in May, Dr. Edgar A. Hines, Seneca, S. C., was elected president, and vice presidents from the various states were elected as follows: South Carolina, Dr. Baxter M. Haynes, Spartanburg; North Carolina, Dr. C. Curtis Hudson, Charlotte; Tennessee, Dr. M. Jacob, Nashville; Alabama, Dr. Samuel W. Welch, Montgomery, and Georgia, Dr. Homer L. Barker, Carrollton.

The "American Child."—A new magazine, called the *American Child,* appeared for the first time last month. It is intended to deal with child welfare problems, and will be published quarterly by the national Child Labor Committee, as successor to the *Child Labor Bulletin.* The editors of the *American Child* propose to publish the investigations and opinions of experts on child welfare. Owen R. Lovejoy is editor of the periodical; Raymond G. Fuller, managing editor; E. N. Clopper and Ruth McIntire, associate editors, and Wiley H. Swift and Josephine J. Eschenbrenner, contributing editors.

Bequests and Donations.—The following bequests and donations have recently been announced:

Presbyterian Hospital, Philadelphia, a contingent bequest of $2,500 on the death of her sister, by the will of Mathilda J. Jones.

Trudeau Sanitarium, Saranac, N. Y., $50,000; Hebrew Orphan Asylum, $15,000, and the residue of his estate of $200,000 to establish the Kerbs Hospital for Tubercular Diseases, provided a daughter dies without issue, by the will of Edward A. Kerbs.

Jewish Seaside Home, Atlantic City, $500, by the will of Rose Lowenstein.

LaHarpe, Ill., for the construction of a public hospital, the estate of Mary F. Davier, appraised at $30,000.

Johns Hopkins Hospital, Baltimore, about $250,000 by the will of John W. Grace, dependent on the expiration of annuities. This fund is to be used in extending the benefits of the pay wards of the institution to persons of moderate means.

Medical Legislation.—Considerable legislation of interest to the medical profession will be introduced at the special session of Congress, which is now fairly well under way. It is understood that several measures to strengthen the Food and Drugs Act will be introduced shortly and these

doubtless will throw further restrictions around the manufacture and sale of drugs. Considerable legislation of a medical nature which is the outgrowth of the war and war problems is to be discussed. The first measure of this kind was introduced by Congressman Norman J. Gould on the opening day of the session. It provides that any soldier, sailor or marine, who has been or may be honorably discharged suffering from wounds, injuries or illness incurred in the line of duty shall be entitled to receive surgical or medical treatment from the medical officers of the Army, Navy or Public Health Service free of charge whenever practicable. Medical officers refusing to grant such aid are to be dismissed from the service at the discretion of the President.

Social Hygiene Board Appropriations.—The United States Interdepartmental Social Hygiene Board, through its executive secretary, Dr. T. A. Storey, Washington, D. C., announces the following recent appropriations from the Scientific Research Fund of the board:

Johns Hopkins Medical School (under the direction of Hugh H. Young, M.D., professor of urology, and John T. Geraghty, M.D., associate professor of urology, to Johns Hopkins Hospital): (1) Development of new synthetic drugs for the treatment of gonorrhea. Under the direction of E. C. White, Ph.D., experimental chemist. (2) Manufacture and investigation of a series of new organic compounds in the treatment of syphilis. Under the direction of David M. Davis, M.D. (3) Manufacture and investigation of a series of penetrating organic dyes in the treatment of chancroids. Under the direction of Ernest O. Swartz, M.D., Cincinnati. (4) Experimental study of various methods of early treatment of venereal infection with the object of developing simpler technic, more efficient and less expensive drugs. Under the direction of William Jack, M.D.

University of Wisconsin Medical School (under the direction of Arthur S. Loevenhart, M.D., professor of pharmacology): An attempt to prepare mercurial and arsenical compounds which have a predilection for the central nervous system, in the hope of finding drugs more useful than any known in the treatment of syphilis of the central nervous system.

League of Red Cross Societies.—The League of Red Cross Societies, the purpose of which is to associate the Red Cross societies of the world in a systematic effort to anticipate, diminish and relieve misery produced by disease and calamity, was formed at Paris, May 7, 1919. The founder members of the league are the Red Cross societies of the United States, Great Britain, France, Italy and Japan, which will invite other Red Cross societies into membership. While the league will establish relations with the various governments, it is purely a voluntary organization, nonpolitical, nongovernmental and nonsectarian. The objects of the league as formally set forth in the articles of association are:

1. To encourage and promote in every country in the world a duly authorized, voluntary National Red Cross organization, having as purposes improvement of health, prevention of disease, and mitigation of suffering throughout the world, and to secure the cooperation of such organizations for these purposes.

2. To promote the welfare of mankind by furnishing a medium for bringing within reach of all peoples the benefits to be derived from present known facts and new contributions to science and medical knowledge and their application.

3. To furnish a medium for coordinating relief work, in case of great national or international disaster.

The control of the league will be by a general council composed of representatives of all members of the Red Cross societies meeting at designated periods. In the intervals between meetings control will be exercised by a governing board of fifteen members elected by the general council and two ex-officio members. The board of governors, which held its first meeting, May 7, consists of Henry P. Davison of the American Red Cross, Sir Arthur Stanley of the British Red Cross, Comte Kergorlay of the French Red Cross, Count Frascara of the Italian Red Cross, and Professor Ninigawa of the Japanese Red Cross. Mr. Davison was elected chairman of the governing board. Geneva is the headquarters of the league.

FOREIGN

The Victory Meeting.—Some of our exchanges in other countries mention the VICTORY MEETING with appreciation and congratulations, and reproduce the notice sent out by the Association asking the Allied governments to send delegates, *en vue d'établir les liens d'une amitié durable entre médecins.*

Physicians in the German Peace Delegation at Paris.—The *Paris Médical* states that the German delegation includes twenty physicians: Drs. Landberg, minister of the empire; Carl Melchior; Max Cahen; Schroeder, undersecretary of state; Richter; von Becker; Schall; Hans Meyer; Bosch; Mühling; Kaufmann; Goldmann; Hirth; Lothringer; Manteler; Hirsch; Herschmann, and Professors Schücking and Bier.

Pasteur Institute at Athens.—The *Grèce Médicale* states that an Athens philanthropist has donated the funds necessary to organize a service for treatment of rabies at Athens, and Dr. Sergent, director of the Pasteur Institute in Algeria, has gone to Athens to advise in its construction. In the meanwhile the service will be installed in a rented building, and Sergent has the work well under way.

Meeting of the Internists of the Northland.—The *Hygiea* states that the Ninth Nordisk Congress on Internal Medicine is to convene at Copenhagen August 18-20, 1919. The subject appointed for discussion is the influence of the diet in the treatment of insufficiency of the heart and kidneys. Professor K. Faber will preside, and the main addresses are to be made by Dr. Rubon of Copenhagen and Dr. K. Motsfeldt of Christiania. Dr. V. Scheel is secretary, address Bispebjærgs hospital, Copenhagen.

University Interchanges.—A committee was formed this year at Lisbon to promote interchange of professors between Portugal and other countries, and the *Medicina Contemporanea* reports that a series of six successful lectures has recently been delivered at Lisbon by Prof. F. Lagrange of the chair of ophthalmology at the University of Bordeaux. He spoke in particular on the progress realized in ophthalmology during the war and on the relations between general disease and disease of the eyes, and described his implant method for preparing the socket for an artificial eye. Professor Lagrange also delivered a similar series of lectures at Madrid.

Meeting of the Surgeons of the Northland.—The Twelfth Nordisk Surgical Congress meets at Christiania, July 3-5, 1919. The topics appointed for discussion are "Gastric and Duodenal Ulcer"; "Premature Separation of Normally Located Placenta," and "Cancer of the Rectum." Prof. K. Brandt will preside, and Dr. J. Borelius is the general secretary. The leading addresses are to be distributed already printed, and only a fifteen minute summary will be delivered. Among other communications announced is one by Prof. R. Bárány on primary suture of wounds of the brain, and one by Tengwall on the findings with functional kidney tests as indications for prostatectomy.

Scandinavian Physicians Organize.—The war has brought the three great Scandinavian countries much closer together as they realized the advantages of cooperative action in various fields, economic, scientific, etc., and the benefit from pooling production to render these three great neutral countries independent of other countries. To promote a still closer union an organization has been formed, the "Norden," with nominal dues and a board of managers to consist of 100 members. Among the delegates from Denmark on the board are four physicians, Drs. K. Faber, Heerfordt, E. Hein and V. Scheel. The latter is editor of the *Ugeskrift for Læger.* In fact, physicians have been mainly the pioneers in the movement.

The Achúcarro Prize in Histology.—To honor the memory of this eminent Spanish histologist, whose untimely death was chronicled last year, his family has founded a prize of 1,000 pesetas to be awarded biannually for the best work that has been published in the four preceding years on normal or pathologic histology. The prize will be awarded alternately in Spain and abroad. In Spain it can be given for the best work on general biology or the total works of an author, as well as for work in histology. Abroad, the field is limited to histology of the nervous system. The board of awards consists of Profs. Ramon y Cajal and L. Simarro, with the laymen, the marqués de Palomares and Severino Achúcarro. The prize is to be awarded this year to a Spanish writer.

Graduate Course on Tuberculosis at Madrid.—The Tuberculosis Preventorium and Dispensary at Madrid has opened what is called the Escuela de Tisiologia, for training in the prevention and treatment of tuberculosis. There are to be two courses, each of three months, and the instruction is to be practical to the utmost. By March 28, thirty-eight physicians of Madrid and the provinces had enrolled for the course. Dr. T. Latour has charge of the subject of seashore sanatoriums; Dr. Calatayud, of electricity; Dr. Mayoral, of laboratory procedures; Dr. Bastos, of bone and joint tuberculosis, and Dr. López Durán, of clinical examinations. The *Revista de Medicina y Cirugía Prácticas* states that the new school does not receive any support from the public authorities.

Deaths in the Profession Abroad.—Dr. **J. P. Carles,** *agrégé libre* of pharmacy and chemistry at the University of Bordeaux until his retirement in 1904, president of the Société de Pharmacie, lauréat of the Académie des sciences, and of the Academie de médecine, aged 74. He did pioneer work in various lines of the chemistry of drugs and foods and published numerous articles. He was on the editorial staff of the *Journal de médecine de Bordeaux*, and his son carries on his traditions with this journal and also in the medical faculty, as *agrégé de médecine*. —— Dr. **Gino Menabuoni,** an Italian pediatrist, aged 38, whose writings are well known. For the last three years he has had charge of the pediatric clinic of the University of Siena, and was on the editorial staff of the *Rivista di Clinica Pediatrica* of Florence.

Report of South African Influenza Commission.—The commission appointed by the governor-general of the Union of South Africa to study the influenza epidemic, recently made its report in which the various phases of this problem were discussed. The commission found no evidence that influenza is an air-borne disease and saw no reason to question the validity of the theory that influenza is spread by contact. The general trend of the evidence submitted was that the spread of the disease was facilitated and accelerated by the railways. The commission was also of the opinion that there is some reasonable doubt as to whether the influenza bacillus or any of the other organisms so far found associated with the disease are the true causative agents of the disease. There is no specific cure for the disease. Very detailed recommendations were made on how to handle future outbreaks of influenza.

Change of Name of the "Nordiskt Medicinskt Arkiv."—The editorial staff of these important archives of the Northland announce that henceforth it is to be known as the *Acta chirurgica scandinavica* and the *Acta medica scandinavica*, instead of its present title as the medical and surgical sections of the *Nordiskt medicinskt Arkiv*. It aims for a wider international scope in its publications and readers, the communications to be published in any of the principal languages the writer prefers. This high class journal was founded by Axel Key in 1869, and thus has now reached its semicentennial. It has been indexed regularly for many years in our Foreign Current Literature Department, but was among those shut off by the war. The *Acta otolaryngologica* and the *Acta mathematica* have already appeared, and maintain the high standard of these other Scandinavian Archives which they continue under another name.

CORRECTION

"Report of Throat Cultures in Measles."—In an article by Dr. R. H. Knowlton, THE JOURNAL, May 24, the heading as given makes it appear that the work was done in Takoma Park, D. C. The author writes that the data were collected at the Base Hospital, Columbia, S. C.

MEXICO LETTER

CITY OF MEXICO, May 25, 1919.

The National Medical Association

On the initiative of a group of leading physicians, a number of meetings have been held to deliberate the question of the advisability of founding in this country a National Mexican Medical Association like those that exist in other countries, to promote the moral and economic welfare of the profession and raise the standards of medical education, etc. It was decided to call a general meeting which is to be held in one of the assembly rooms of the Y. M. C. A. building. Dr. G. Mendizábal, well known as a speaker and as a cultured and honorable member of the profession will address the meeting, explaining the objects of the proposed association. Dr. D. Vélez, ophthalmologist, and Dr. Godoy Alvarez, gynecologist, have been particularly prominent by the enthusiasm they have displayed in regard to the project, which, it is hoped, will culminate in a fine reality.

University Notes

Lic. Macias, rector of the university here, has been invited to take part in the ceremonies at the University of Arizona in the coming July, and it is expected that he will accept the invitation.——Reciprocally, Mr. R. B. von Klein Smid, who is president of the University of Arizona, has been invited through the Mexican Embassy at Washington to come to this country, and a committee appointed by the University is to proceed to the frontier to welcome him and escort him to the capital.——Prof. D. C. Reiche has been appointed to the chair of biology in the Escuela de Altos Estudios.——The resignation of Dr. Terrés was not accepted, and he will continue at his post as professor of clinical medicine where he has been so successful.——Dr. Jesús Arroyo, professor of histology in the medical faculty, has been elected a member of the Academia de Medicina, his address on the colloidal gold reaction having won him this distinction.

Medical Publications

The rather short list of medical journals in Mexico has just been enriched with two new ones, the *Revista del Hospital Militar de Orizaba* which has just started publication in the town of this name in the state of Veracruz. It is to be devoted mainly to topics of military medicine. Col. Dr. Cándido Nieto is the director. The other new journal is the *Archivos Médicos del Norte*, which is being issued in the city of Torreón in the cotton district of the state of Coahuila. The director is Dr. F. de Rosenzweig, a surgeon well known here and in the northern part of the country.

Cordial Reception to Red Cross Medical Delegate

Dr. R. R. Vértiz, delegate from the Mexican Red Cross to the international conference at Berne, writes from New York of the cordial welcome he received from the personnel of the North American Red Cross, both at the city of Washington and in New York. He had to go to Washington to have his passports made out. This Mexican physician was delighted with the "cortesía exquisita" shown him in the neighbor country, and the letter in which he expressed these sentiments was given to the press for publication.

Death of a Mexican Delegate

A cablegram from Montevideo has just announced the sudden death of D. Amada Nervo, perhaps the leading Latin-American poet of our day, minister from Mexico to Argentina and Uruguay, and delegate from Mexico to the Child Welfare Congress, the Congreso del Niño.

PARIS LETTER

PARIS, May 15, 1919.

The Red Cross of America and of the Allies

The American Red Cross proposes to reorganize its activities so that its essential purpose will be to afford relief, especially to the repatriated inhabitants of the devastated regions of France and Belgium. The Red Cross Societies of the Allies have formed a league, and President Wilson has addressed a letter to Mr. Henry Davison, president of the league, extending congratulations on his having successfully united all the Red Cross societies in a common effort to relieve misery, the result of disease and great calamities.

A Memorial to Professor Landouzy

A committee has been formed consisting of colleagues, students and friends of Professor Landouzy to secure funds by subscription with which to establish a Landouzy Museum at the Faculté de médecine de Paris and to strike off a medal to be given to subscribers. Subscriptions may be sent to the treasurer of the committee, M. P. Masson, 120, boulevard Saint-Germain, Paris.

Bestowal of the Fourragère on American Sanitary Companies

American Sanitary Companies 539 and 625 have been decorated with the fourragère combined with the colors of the croix de guerre.

Brazilian Physicians made Members of Legion of Honor

Colonel Nabuco de Gouvea, chief of the Brazilian military mission in France, has been made a commander of the Legion of Honor. Dr. Mourier, undersecretary of state for the Army Medical Corps, praised the Brazilian mission for the work done by its medical corps during the war and for the services rendered by the Brazilian hospital at Vaugirard, which was organized by Colonel Nabuco de Gouvea. Drs. Borges da Costa, Parreiras, Horta and Montenegro, chiefs of service in this hospital, have been awarded the cross of a chevalier of the Legion of Honor.

Use of Refrigerated Meats

At a recent session of the Académie de médecine, M. Martel, director of the veterinary and sanitary services of Paris and of the department of the Seine, stated that the use of refrigerated meat has increased considerably in France.

For several months past Paris and the contiguous territory alone have used from 200 to 250 tons per day.

The chemical changes which take place under the influence of prolonged cold are comparable to those sustained by the so-called *rassic* which the large cities have been using for some time, except that the action of the bacteria on the surface is considerably reduced.

Death of Eminent Chemist

Dr. J. P. Carles, associate professor on the Bordeaux medical faculty and corresponding member of the Academy of Medicine since 1902, is dead.

Personal

At a meeting held May 13, the Academy of Medicine elected four national correspondents: Dr. Paul Courmont, professor of experimental and comparative medicine on the Lyons medical faculty; Dr. Lemoine, medical inspector of the army; Dr. Pachon, professor of physiology on the Bordeaux medical faculty, and Dr. Remlinger, director of the Tangiers Pasteur Institute.

At its last meeting the council of the Paris medical faculty elected four professors: Dr. Ménétrier, associate professor and hospital physician, was made professor of the history of medicine. Dr. J. L. Faure, associate professor and hospital surgeon, was made professor of clinical gynecology. Dr. Duval, associate professor and hospital surgeon, was made professor of clinical surgery. Dr. Gosset, associate professor and hospital surgeon, was made professor of operative medicine (médecine opératoire).

LONDON LETTER

LONDON, May 14, 1919.

"Patent Medicine" Advertisements

In the discussion on the second reading of the ministry of health, Lord Buckmaster said that the only objection to the bill was that it did not go far enough. He would like to have seen some better provision made to enable knowledge of the laws of health to be extended. One of the most important duties to be undertaken in connection with this bill was the control of advertisements relating to "patent medicines" and patent foods. Unless control were effected through this ministry of health, it would never be effected at all. The reason is this: The value of the advertisements of these patented articles is so vast that there is no journal which dares expose the mischievous character of these preparations for fear of finding a loss instead of a profit indicated by its balance sheets. Some of these "patent medicines" are deliberately deleterious, and, in many cases, cause damage to children's health. If the ministry lacks authority to deal with the evil, the needed power should be given it. In the government reply to the discussion, nothing was said on this important topic.

The Ravages of Ankylostomiasis in Queensland

Dr. Lambert, who is investigating ankylostomiasis in Queensland for the Rockefeller Foundation, declares that 23 per cent. of the population of the coast are infected. He says that if the ravages are not combated, a degenerate race will result in a few generations. This statement evoked a sharp contradiction in the columns of the *Times* from the high commissioner for Australia, and from the agent general for Queensland. It was, however, borne out by the eminent helminthologist, Dr. R. T. Leiper of the London School of Tropical Medicine. He quoted the first progress report of the Queensland hookworm campaign conducted by the department of public health under the advice of, and in close affiliation with, the Australian Institute of Tropical Medicine, which was published in 1918. The region surveyed extended over 2,000 square miles, embracing 280 miles of coastal country, from Cooktown to Townsville, with a population of 14,137. The canvass was so carefully conducted that of this total no fewer than 11,678 persons voluntarily submitted to examination for hookworm. Of these, 2,623 were found to be infected. Dr. Leiper also quoted the report of the Queensland Department of Public Instruction on the effects of hookworm infection on the mental development of North Queensland schoolchildren, which was published in January last. The report says: "The direct outcome of the results of such a blighting disease, which is preying on 40 per cent. of the total school population from Cooktown to Townsville, and which is stamping serious mental, physical and sexual degeneracy on 25 per cent. of the total school population, can be nothing other than the weakening of the social fabric and the unfitting of the coming generation for the struggle for existence. Indeed, the tendency of the disease, if not controlled, is toward the obliteration of the race through the unsexing of its victims and the reducing of individual resistance toward acute infections such as pneumonia and tuberculosis."

The Medical Parliamentary Committee

The formation of the Medical Parliamentary Committee was described in a previous letter to THE JOURNAL. Its objects are to increase medical representation in Parliament, to supply information of the trend of expert opinion on health questions, and to supply early information on impending legislation to the various medical organizations which are represented on the committee. These comprise most of the medical organizations, such as the Society of Health Officers, the Medical Women's Federation, the State Service Association, the British Dental Association, the National Medical Union and the Medico-Political Union. After some hesitation the British Medical Association, which has always held that its political activities cover every field and that, therefore, other medicopolitical bodies are superfluous and even detrimental by dividing the profession, has so far recognized the Medical Parliamentary Committee as to send representatives to a conference which has been held under the presidency of Sir Watson Cheyne, M.P. In proposing the first resolution, Dr. A. Latham emphasized the point that the Medical Parliamentary Committee was a temporary body appointed only for the purpose of devising some scheme whereby the opinions of the profession can be focused, and by means of which, through increasing parliamentary representation or through agitation they may be conveyed to the public. He said that in the near future health questions are bound to loom large in all legislation. He declared that the medical profession consists of men engaged in a number of different types of work—factory, colliery or other industrial forms of practice, general practice among the poor and well-to-do, medical officers of health, school physicians, navy, army and air force physicians, specialists, consultants, and men engaged in research; and stated that health questions in time of peace are as complex as any that arise in the management of an army. Any medicopolitical question, he said, would be looked at by different sections of the profession from different angles, and some organization was necessary whereby representatives of each of these sections might be brought together.

At present there is no organization of the profession representing the whole body, he pointed out. Nearly all existing bodies, moreover, have had too much work arising out of their special aims to permit them to give much time to political developments, while nearly every one has been suspected of furthering the interests of the profession at the expense of the public good. This is fatal to medical progress. If the new body is to be successful it must obtain increased political influence, and for that must secure the confidence and sympathy of the public, he said. It must be recognized as looking after the community rather than after the physician; and this is proper, for the interests of the physician will be cared for if the interests of the community are met. The medical profession has made a mistake in the past in not leading the public to understand that the interests of physicians are wrapped up in the interests of the community. Unfair conditions of service will produce a discontented profession and bad work.

Sir Thomas Verrall addressed the meeting as representative of the British Medical Association. He said that he could not avoid pointing out that the association did all the things claimed by the Medical Parliamentary Committee. If it were left to the association to establish a permanent parliamentary committee, as he thought would be wise, the association would probably agree that there should be a permanent parliamentary committee of some kind. It would be necessary to present to all members of Parliament a right view of health questions. The custom of the association had been to communicate not only with medical members of Parliament but also with all heads of departments. He would not oppose the formation of a permanent medical parliamentary committee, but he hoped that for the present the question of its construction would be left open. A resolution was then carried that the committee consist of: (*a*) a representative or representatives of any society or association of registered dental or medical practitioners having as its objective, or taking an interest in, medicopolitical activity; (*b*) two representatives appointed by the nursing profession; (*c*) a representative of midwives; (*d*) a representative appointed by the Pharmaceutical Society; (*e*) a representative appointed by the British Hospitals Associa-

tion; (*f*) the editor of: (1) the *British Medical Journal*, (2) the *Lancet*, (3) the *Medical Press*, (4) the *Medical World* and (5) the *Medical Times;* (*g*) all medical members of Parliament, and (*h*) members, not exceeding 20 per cent. of the elected representatives of the whole medical profession, to be elected as soon as the committee's financial position warrants the necessary expenditure.

An Atlas for the Blind

One of the latest productions of the National Institute for the Blind is a geographic and industrial atlas of the British Isles. The book is the outcome of years of experimenting and improvement on old maps for blind people; for the providing of a map that can be studied by means of the finger-tips has proved immensely difficult. Largely owing to the efforts of Mr. H. M. Taylor, F. R. S., of Cambridge, himself sightless, the work is a great advance over anything achieved before. It is very complete, and follows to the smallest detail the ordinary printed atlas. Towns, rivers, boundaries, coast-lines, mountain ranges, and railways are all distinctly marked. Each one of these has a number marked against it which corresponds with a key on the page opposite the map. The volume is a large one, containing 222 pages, twenty-one of which are maps, and is bound in cloth boards. The price is only half a dollar.

Marriages

CHARLES WALLIS, Lieut., M. C., U. S. Army, Arkadelphia, Ark., on duty at Fort Brady, Mich., to Miss Eva Isabelle Feetham, of Sault Ste. Marie, Mich., May 24.

DOUGLAS HEATH NISBET, Lieut., M. C., U. S. Army, Boston, on duty at Charlotte, N. C., to Miss Thelma Russell of Marlboro, Mass., May 7.

JAMES MICHAEL MCTIERNAN, New York City, to Miss Florence Morgan Cadwell of Hartford, Conn., in New York City, May 17.

MONTAGUE LAFFITTE BOYD, Atlanta, Ga., to Miss Margaret Phillips of La Grange, Ga., recently.

THOMAS RODMAN GOETHALS, Boston, to Miss Mary Addison Webb of Washington, D. C., June 3.

JULIUS HIRAM COMROE, to Miss Catherine L. Baker, both of York, at Philadelphia, May 16.

ROBERT ADDISON MILLIKEN, Indianapolis, to Miss Mildred Post of New Orleans, May 20.

Deaths

James Herbert Stowell ✠ Chicago; Northwestern University Medical School, Chicago, 1881; aged 65; a specialist in internal medicine; a member of the council of the Chicago Medical Society and president of the Society in 1900-1901; once chairman of the Medical Section of the Illinois State Medical Society; a member of the consulting and examining board of Cook County Hospital; attending physician to the Chicago, Baptist and Samaritan hospitals; medical director of the United States Annuity and Life Insurance Company; died suddenly at his home, May 31, from heart disease.

Nelson R. Gilbert, Bay City, Mich.; Cleveland University of Medicine and Surgery, 1871; aged 77; president of the board of control of the Home for the Feeble-Minded and Epileptics, Lapeer, Mich.; for four years treasurer of Otsego County; for six years chairman of the board of health, and city physician of West Bay City, and for many years physician of Bay County; died at his home, May 19.

Alexander Lyle ✠ New York City; New York University, New York City, 1888; aged 52; professor of surgery in the Polyclinic Medical School and Hospital, New York City, since 1908; attending surgeon to the City Hospital, Blackwell's Island; a fellow of the New York Academy of Medicine; died at his home, May 23.

Samuel Hendrickson, Jamaica, N. Y.; College of Physicians and Surgeons in the City of New York, 1875; aged 69; a member of the visiting staff of St. Mary's Hospital, Jamaica; at one time sanitary superintendent of the department of health for Queens' County; died at his home, May 20, from heart disease.

Roderick Colin McLennan, Syracuse, N. Y.; College of Physicians and Surgeons in the City of New York, 1886; aged 61; consulting surgeon to the Syracuse Women's and Children's Hospital; a charter member and once president of the Syracuse Academy of Medicine; died at his home, May 15.

Edwin Field Sampson ✠ Lieut., M. C., U. S. Army, New York City; Harvard Medical School, 1909; aged 36; on duty at Camp Zachary Taylor, Louisville, Ky.; a member of the staff of Bellevue Hospital; died at the base hospital, Camp Taylor, April 22, from hemolytic streptococcus pyemia.

John Herman Eden, New York City, and Great Neck, L. I., N. Y.; Yale University, New Haven, Conn., 1873; aged 69; formerly a member of the staff of Bellevue Hospital; died at his home in Great Neck, May 19, from heart disease.

William Bernard Rasing ✠ Cleveland, Ohio; Cleveland College of Physicians and Surgeons, 1908; aged 33; a member of the Cleveland Academy of Medicine; a specialist in urology; died at his home, May 20, from pneumonia.

Simpson Matthew Ekermeyer, New Bremen, Ohio; Eclectic Medical Institute, Cincinnati, 1881; aged 58; a member of the Ohio State Medical Association; died in a sanitarium in Columbus, Ohio, May 5, from cerebral hemorrhage.

James Mitchell Taylor, Chicago; Homeopathic Medical College of Missouri, St. Louis, 1869; aged 71; a member of the Illinois State Medical Society; died at his home, May 26, from pneumonia following a surgical operation.

Nathaniel L. Edwards, Bluefield, W. Va.; (license, West Virginia, 1900); aged 49; a colored practitioner; proprietor of the Mercer Sanitarium, Bluefield; died at that place, February 24, from meningitis following influenza.

Edwin Everett Smith, Cold Spring, N. Y.; Long Island College Hospital, Brooklyn, 1871; aged 74; a psychiatrist; a life member of the Medico-Psychological Association; died at his home, May 24, from valvular heart disease.

Myron Lawrence Marr, Dorchester, Boston; Bowdoin Medical School, Brunswick and Portland, Me., 1879; who had been in the construction business for several years; died in New York, May 21, after a surgical operation.

August Beil, Selby, S. D.; New York Homeopathic Medical College, New York City, 1896; aged 56; a member of the South Dakota State Medical Association; died at his home, April 17, from disease of the heart and kidney.

Bertha Barbara Schroeder, Chicago, Loyola University, Chicago, 1908; aged 34; a member of the Illinois State Medical Society; died in Mercy Hospital, Chicago, June 1, from heart disease.

George Washington Carr, Fort Deposit, Ala.; University of Pennsylvania, Philadelphia, 1855; aged 84; a surgeon in the Confederate Service throughout the Civil War; died at his home, May 11.

William Wheeler Squire, Visalia, Calif.; Hahnemann Medical College, Chicago, 1876; Rush Medical College, 1875; aged 71; formerly mayor of Visalia, died at his home, May 17, from cancer.

Henry A. Bremmer, Ashton, Ill.; Chaddock School of Medicine, Quincy, Ill., 1886; aged 67; health officer of Ashton; died in the Lincoln (Ill.) Hospital, May 11, from heart disease.

Frank Litten ✠ Austin, Tex.; Jefferson Medical College, 1887; aged 54; was found dead in his automobile, in the mountains about seven miles from Austin, May 16.

Samuel Thomas Tapscott, Searcy, Ark.; Memphis, Tenn.; Medical College, 1858; aged 85; for forty years a resident of Searcy; died at his home, May 14.

Commodore P. Barrett, Mount Vernon, Ind.; Hospital College of Medicine, Louisville, Ky., 1898; aged 49; died at his home, March 17, from brain tumor.

Charles E. Emerick, Harrisburg, Pa.; University of Pennsylvania, Philadelphia, 1886; aged 62; died at his home, May 4, from erysipelas.

Robert Franklin Burton, Little Rock, Ark. (license, State Medical Board, Arkansas, 1903); aged 44; died in Fowler, Colo., May 4.

Valentine Jacob Bold, Philadelphia; Jefferson Medical College, 1890; aged 50; died at his home, May 21, from heart disease.

Frederick W. F. Riehl, Alameda, Calif.; University of Berlin, Germany, 1867; aged 76; died at his home, May 21.

✠ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

COLLOSOL PREPARATIONS

Report of the Council on Pharmacy and Chemistry

The Council has adopted and authorized publication of the report which appears below declaring "Collosol Argentum," "Collosol Arsenicum," "Collosol Cocain," "Collosol Cuprum," "Collosol Ferrum," "Collosol Hydrargyrum," "Collosol Iodin," "Collosol Manganese," "Collosol Quinin" and "Collosol Sulphur" inadmissible to New and Nonofficial Remedies, because their composition is uncertain (conflict with Rule 1). In the few cases in which the therapeutic claims for these preparations were examined, the claims were found to be so improbable or exaggerated (conflict with Rules 6 and 10) as to have necessitated the rejection of these products.

W. A. Puckner, Secretary.

The Anglo-French Drug Co., Ltd., London and New York, in November, 1918, requested the Council to consider the products "Collosol Argentum," "Collosol Arsenicum," "Collosol Cocain," "Collosol Cuprum," "Collosol Ferrum," "Collosol Hydrargyrum," "Collosol Iodin," "Collosol Manganese," "Collosol Quinin" and "Collosol Sulphur." The term "Collosol" appears to be a group designation for what are claimed to be permanent colloidal solutions, marketed by the Anglo-French Drug Co., Ltd. Were this claim correct, "Collosols" should contain their active constituents in the form of microscopic or ultramicroscopic suspensions, protected against spontaneous precipitation by the presence of proteins or some similar "stabilizers."

According to the original patent specifications for Collosols, the metals are precipitated or treated with "peptone," which acts as the suspending or stabilizing agent. The method of using the peptone makes it doubtful, in the first place, whether the major part of the metals is present in colloidal form, or merely in the form of peptonates, i. e., as ordinary salts. Moreover, the later patents indicate that the products have been unsatisfactory; "experience having shown that some metal colloids under certain conditions not yet fully understood have the tendency to break down after a certain period" (U. S. patent No. 1,116,247). Phenol, it is claimed, has a tendency to counteract this decomposition, and the patent covers the use of phenol for this purpose.

It is difficult to see how phenol could possibly have such action. In fact, it obviously does not, for a number of the samples of Collosols submitted to the Council had separated. For instance, "Collosol Hydrargyrum" was not a colloidal solution at all, but a suspension of a coarse powder. The ampules of "Collosol Ferrum" contained a considerable quantity of flocculent precipitate. If either of these preparations were injected intravenously as directed, death might result, making the physician morally if not legally liable.

The recklessness of the claims is further illustrated by the advice that these indefinite mixtures of poisonous metals can be injected in unlimited quantities. Thus, Henry Crookes stated (*Chemical News*, May 7, 1914, p. 218) that Collosols "contain so small a proportion of metal, viz., 1 in 2000, that even a poisonous body like arsenic can be used with impunity." He stated that they may be applied as a lotion, intramuscular or intravenous injection, and that "one pint or more can be injected intravenously."

In the case of "Collosol Cocain," as was brought out in the Council's report published in The Journal, April 12, 1919, the manufacturers have admitted that the product is not what they have claimed—and still claim—for it. The report of the A. M. A. Chemical Laboratory showed that "Collosol Cocain," instead of containing 1 per cent. cocain as claimed, contained, in fact, at most not more than 0.4 per cent. cocain.

The report of the A. M. A. Chemical Laboratory on the Collosol products was sent by the Council to the New York office of the Anglo-French Drug Co., Ltd., in duplicate, in order to facilitate reference to the London office. This was some months ago. The information which the Council requested has not yet been received, nor has the Anglo-French Drug Co., Ltd., indicated its intention of supplying such information. On the other hand, claims to which specific objection have been made, continue to appear in current advertising. Accordingly, the Council authorizes publication of this report, and declares the Collosol preparations previously named ineligible to New and Nonofficial Remedies.

Correspondence

"MALARIA CONTROL IN THE FUTURE"

To the Editor:—My attention has been drawn to an editorial appearing in The Journal (**72**:1465 [May 17] 1919), entitled, "Malaria Control in the Future." I feel that I must take exception to this editorial on most important matters both of principle and of fact. First, in the fore part of the editorial is the statement:

> Few organizations or governments could aspire to cope with the malaria problem as efficiently and successfully as is likely to be done by the International Health Board of the Rockefeller Foundation. . . .

I cannot too strongly condemn a statement of this character appearing in the columns of a journal such as The Journal of the American Medical Association, for the following reasons: 1. It apparently concedes the hopelessness of the control of malaria as an official governmental activity, either of the federal government or of the states. This is not only absolutely wrong in principle, but is not in accord with the facts. 2. Not only is the United States Public Health Service at the present time engaged in cooperation with states and localities in eradicating malaria in seventeen different localities and in nine different states, but during the war it instituted malaria control in connection with the work of extracantonment sanitation over an area ten times as great as the Panama Canal Zone. At present it has on active duty the finest and most experienced corps of medical officers and engineers, conversant with the work of malaria eradication, which has ever been brought together in the history of the world. The Public Health Service is prepared to maintain this corps of specially trained experts and to add to it for aiding states and municipalities in eradicating malaria. Moreover, owing to the stimulus given to this work by the Public Health Service, practically $750,000 was raised locally during the year 1918 by various municipalities and counties for the purpose of controlling malaria, the operations being supervised by the Public Health Service.

Does this appear as if "few organizations or governments could aspire to cope with the malaria problem as efficiently and successfully as is likely to be done by the International Health Board of the Rockefeller Foundation"?

Passing now from a discussion of the principle contained in the statement, to matters of fact, we find in this editorial that the work of the Rockefeller Foundation in the eradication of malaria has been confined to two specific demonstrations: (*a*) the sterilization of human carriers by the administration of quinin, and (*b*) the control of malaria in one community by screening. The impression given by the editorial is that work of this character had never been done before in this country on such an extensive scale.

The editorial does not state that the plans for this work were prepared by the late Surg. R. H. von Ezdorf of this service, who lost his life in this work, nor that Dr. H. A. Taylor, who was field director at Crosset, received his training in the U. S. Public Health Service, and was transferred from that service to the International Health Board, and that this experimental work was carried out under the immediate supervision of an officer of the federal Public Health Service. Moreover, the first report of this demonstration was published as Public Health *Bulletin No. 88* of this service, in September, 1917. The editorial is singularly

unmindful of the fact that field investigations of malaria have been actively and extensively pursued by the Public Health Service since 1912, and demonstrations in the control of malaria have been carried on by the service on an increasing scale until in 1918 the expenditures of the Public Health Service for demonstrations in the control of malaria were in the neighborhood of $1,000,000.

In view of the fact, therefore, that the control of malaria must in this country be a function of official and governmental rather than of unofficial and private agencies, and that this editorial not only ignores the extensive work of the Public Health Service, but implies that malaria control of the future, far from being a government matter is to be conducted by private and unofficial agencies, such as the International Health Board, I cannot but deprecate this publication at a time when the federal Public Health Service requires the fullest support for the necessary increase of its work. Furthermore, the whole tone of the editorial apparently concedes the futility of handling these problems by governmental agencies, and tends to create the impression that such important national health problems must be left to the unofficial and private agencies of the country to solve.

In conclusion, I may say that while at present in sparsely settled districts it may not be practicable for local communities to undertake measures for malaria eradication, the experience of the Public Health Service has shown that, far from being impracticable to induce communities to bear the expense of this work, it is becoming easier all the time; and furthermore the government now has pending before Congress a proposal to buy farm homes for soldiers by utilizing certain areas formerly uninhabitable because of malarial conditions, and to make these habitable and economically productive by the extensive use of malaria control measures which will be undertaken by the Public Health Service.

RUPERT BLUE, Surgeon-General.

ADMINISTRATION OF ARSPHENAMIN

To the Editor:—In his recent communication the director of the Hygienic Laboratory, after detailing what he considers the most important points—adequate dilution and slowness of administration—concludes: "Any physician who fails to observe these precautions should be considered as directly responsible for serious results that follow the improper use of this drug."

This statement, if unchallenged, may prove embarrassing to those physicians whose method of administration differs from that advocated. For the past eighteen months, both in private practice and in the out-clinic work at Touro Infirmary, I have abandoned the large dilutions and the gravity method of giving arsphenamin for the syringe and concentrated solutions. During this period, I have given, or supervised the giving of, approximately 2,000 injections of arsphenamin by the latter method. Our routine practice is to dissolve 0.6 gm. of the drug in 20 c.c. of freshly distilled water. The average dose given to an adult man of normal weight is 0.5 gm. and to a woman, 0.4 gm. In fresh infections, especially before the onset of a positive Wassermann test, we commonly give 0.6 gm. to the man and 0.5 gm. to the woman, repeating this dose weekly for three doses, and then give at least two more injections at longer intervals, with mercury and iodids in some form between and following the later injections.

Not merely once, but hundreds of times, I have injected 0.6 gm. arsphenamin in 20 c.c. of water in from twenty to thirty seconds without the slightest unpleasant results, either immediate or delayed. The slowness of the injection, on which Dr. McCoy lays so much stress, may be of importance when a large quantity of fluid is being introduced, but when the quantity is as small as 20 c.c., rapidity of injection is not significant. Our patients, except a few high-strung persons, are hardly aware that they have taken medication. Even the so-called "nitroid crises" are unusual when the syringe method is used. Since we have been using this method, we have seen less of other complications. We have had no fatalities, only one case of severe nephritis, now entirely well, but one case of jaundice, and four cases of toxic dermatitis preceded by hyperpyrexia. In our series of 2,000 injections, the results will compare favorably with those of other clinics, no matter what method of administration is followed.

The syringe method and concentrated solutions of arsphenamin, because of greater simplicity of administration and saving of time involved, is the method of choice in a busy clinic. It is at least as safe as the technic advocated by Dr. McCoy.

At present I rarely use neo-arsphenamin either in clinic or office practice. While I have had experience with all of the preparations of arsphenamin available, I routinely use that put out by the Dermatological Laboratory of the Philadelphia Polyclinic. The fact that we dissolve this preparation in boiling water without hesitation, and that our results have been uniformly good with it, has made us disinclined to change.

Success in the administration of arsphenamin depends chiefly on the following points: first, the selection of a reliable preparation; second, the use of freshly distilled, boiled water, both for dissolving the arsphenamin and for the sodium hydroxid solution; third, care in selecting the patient and adjusting dosage and frequency of repetition.

A. NELKEN, M.D., New Orleans.

FAS EST ET AB HOSTE DOCERI

To the Editor:—I note with surprise, not to say indignation, that in recent issues of THE JOURNAL abstracts from the *Deutsche medizinische Wochenschrift, Berlin,* have appeared. I wonder what the views of THE JOURNAL'S readers are regarding this untimely recognition of German medical science? Is it possible we are so in need of our enemies' Kultur that we must have it while a state of war still exists between Germany and the United States? Have we as a profession so soon forgotten the refined barbarities, worked out with such patience and success in the laboratories of German scientists and by their dictation and direction so relentlessly carried out by their ignorant tools, the personnel of their armies? Poison gas, liquid fire, ablation of the breasts of women as a token and a warning that they have been ravaged by those who knew themselves to be infected with loathsome diseases—the whole long list of inhuman, almost unmentionable acts—these were not thought out by the German war lords, however much they gloried in them. They were the direct products of German chemists, German sanitarians, German doctors.

With thousands of our boys still standing their watch on the Rhine, with thousands still in military hospitals recovering as far as they may from the wounds of an absolutely unjustifiable war, with those other thousands, hurried to untimely graves on foreign soil, do we ever want more of German science? Can we so soon forget these facts and give aid to the only too apparent renaissance of German propaganda by according its science a place in our national medical journal?

We know how we have been humbugged by purchasing at exorbitant prices literal ship-loads of worthless coal-tar derivatives because they were heralded by the paid testimonials of Herr Professor This, That and the Other. We know the "Made in Germany" stamp put on hundreds of really meritorious discoveries stolen or elaborated from the work of English, French, American and other workers. These facts alone should be enough to make us a bit wary of German science.

But with this deluge of blood scarce staunched, it seems to me most unfitting—nay worse—to give the slightest recognition to German medicine. They are still belligerent. They are absolutely unrepentant, still snorting fire and considering themselves undefeated supermen. Even their peace delegates are haughty, overbearing, ungracious—pigs.

Many think the peace terms too easy. The worst punishment rests with the people. Germans crave publicity. They live and thrive on the reputation of their products carefully built up by this publicity. Ignore them! Condemn them to

innocuous desuetude! Their language has been dropped from the school curriculum. Good! Drop their science from our literature. Alas, that it was ever taken up again! If we cannot live without it, let us die patriotically!

Ross G. Loop, M.D., Elmira, New York.

PROTECTION AFFORDED OKLAHOMA HOGS FROM UNQUALIFIED VETERINARIANS

To the Editor:—The following item from the Dallas (Texas) *News* illustrates a principle familiar to every member of the medical profession:

Oklahoma City, Okla., May 27.—Complaints are being received by J. A. Whitehurst, president of the State Board of Agriculture, from graduate veterinarians that provisions of the 1916 statute relative to vaccinating hogs for cholera place an unnecessary burden upon the veterinarians in requiring examination and bond before they can apply the simultaneous serum and virus vaccination. Mr. Whitehurst applied to the attorney general for an opinion in the matter, and the reply is that however severe the burden may be there is no way to relieve it, and that the provisions of the law must be complied with. Laymen, veterinarians, physicians and all are placed in the same category, says the opinion of the attorney general. They must pass a satisfactory examination at the hands of the veterinary department of the A. & M. College and put up a bond of $1,000 to be approved by the Board of Agriculture.

In this state as well as in many others, the chiropractor and the Christian scientist do business without leave. They practice on human beings, no matter how serious the ailment may be. The osteopaths have to take an examination in their own peculiar theories, though they are allowed to apply these extraordinary theories in the treatment of any disease, chronic or acute. But the poor veterinarian has to qualify professionally and in addition put up a thousand dollar bond before he is allowed to dose the swine! It is said that the most convulsive type of humor is sometimes born of tragedy.

S. H. Landrum, Altus, Okla.

"LIPOVACCINES"

To the Editor:—Allow me to direct your attention to an error in the editorial on "Lipovaccines" in The Journal, May 3, 1919, p. 1297. It is stated that "Le Moignic and Pinoy were the first to substitute oils for the physiologic sodium chlorid solution previously used in making vaccines. . . ." So far as I am able to ascertain the first lipovaccines were made, and their use applied in the prevention and treatment of disease, by myself in 1913 and 1914, and mention of this fact was made in an article entitled "The Vaccine Treatment of Gonorrhea" which appeared in The Journal in 1915. The fact that my associates and I found such vaccines of doubtful utility and abandoned their use is not of material importance in the present consideration. No reference to the work of Le Moignic and Pinoy was given in the editorial, but their article appeared in 1916 (*Compt. rend. Soc. de biol.*, lxxix, p. 201), a year following the note of my own above mentioned.

Carl C. Warden, M.D., Ann Arbor, Mich.

"IDENTITY OF THE POPPY IN FLANDERS' FIELDS"

To the Editor:—There would seem to be some doubt from recent letters to The Journal respecting the particular poppy "in Flanders' fields." This is *Papaver rhoeas*, the common red, or corn, poppy. It flourishes abundantly in the wheat fields of Europe, and many writers have remarked that the crop of poppies the season after a battle is increased. This is probably due to additional fertilization. The fresh petals are supposed to possess slightly narcotic properties. A syrup prepared from these petals has been used as a coloring ingredient. Medicinally the plant is practically valueless, and has of course no connection with *P. somniferum*, the opium poppy, which is the one so often mentioned in connection with sleep by the poets, as:

"The end of all, the poppied sleep" (Swinburne).

Francis H. Mead, M.D., San Diego, Calif.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STATISTICS ON ARMY EXAMINATIONS AND VENEREAL DISEASE

To the Editor:—Please send me at your convenience full data concerning: (1) the number of our boys examined medically for the army; (2) number of white men; (3) number of colored men, and (4) percentage of those with venereal disease.

Fanny R. Smith, Chicago.

Answer.—1. The Second Report of the Provost Marshal-General, up to Dec. 20, 1918, indicates that the total number of men examined physically under the Selective Service Law was 3,208,446, of whom 2,259,027—70.41 per cent.—were found physically qualified in Group A; 88,436—2.76 per cent.—were in the remediable Group B; 339,377—10.58 per cent.—were in the limited service Group C, and 521,606—16.25 per cent. —were found physically disqualified and placed in Group D. Out of the 2,124,193 men inducted into service, 172,000, or 8.1 per cent., were rejected later in camp.

2. Of the 3,208,446 men examined, 2,749,608 were white.

3. The colored men numbered 458,838.

4. Out of 467,694 men rejected, both in camp and by local boards, 6,235, or 1.3 per cent., were rejected because of venereal disease. The relative numbers of colored and white with venereal disease are not yet available.

SCARLET FEVER AND DIPHTHERIA STATISTICS IN TEN LARGE AMERICAN CITIES FOR 1917 AND 1918

To the Editor:—Will you please give me the morbidity and mortality statistics of scarlet fever and diphtheria for 1917 and 1918 in the following cities: Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, New York, Philadelphia, Providence and Toronto?

E. V. Murphy, Montreal, Canada.

Answer.—The morbidity and mortality statistics for scarlet fever and diphtheria in these cities, as reported to us by the health officers, are:

	Population Estimated by U.S. Census Bureau as of July 1, 1916	Scarlet Fever—Morbidity 1917	Scarlet Fever—Morbidity 1918	Scarlet Fever—Mortality 1917	Scarlet Fever—Mortality 1918	Diphtheria—Morbidity 1917	Diphtheria—Morbidity 1918	Diphtheria—Mortality 1917	Diphtheria—Mortality 1918
New York	5,602,841	6,260	4,460	120	177	12,624	11,455	1,158	1,245
Chicago	2,497,722	13,444	1,809	623	48	10,290	5,708	1,228	720
Philadelphia	1,709,518	1,464	1,384	31	43	3,141	2,477	441	384
Boston	756,476	1,497	1,126	46	24	4,098	2,832	278	217
Cleveland	674,073	618	408	14	11	1,856	1,371	155	109
Baltimore	589,621	544	366	11	8	690	671	58	71
Buffalo	468,558	560	632	30	18	1,009	975	108	112
Cincinnati	410,476	411	279	15	3	814	733	51	43
Toronto	376,538*	548	1,096	13	33	1,445	1,263	82	97
Providence	254,960	423	355	15	18	934	729	80	56

* Toronto population according to 1911 census.

"CAPTAIN OF THE MEN OF DEATH"

To the Editor:—In the interest of accuracy allow me to direct attention to a rather flagrant misquotation in your issue of May 24, page 1541, near the foot of the first column where pneumonia is called "master of the men of death." This should be, I believe, "captain of the hosts of death."

C. Reiterman, M.D., Los Angeles.

Answer.—Neither of the quotations is correct. According to Sir William Osler, Bunyan bestowed on tuberculosis the name of "captain of the men of death." Osler himself says: "One of the most widespread and fatal of all acute diseases, pneumonia, has become the 'captain of the men of death,' to use the phrase applied by John Bunyan to consumption."

ADALIN

To the Editor:—Will you kindly inform me what adalin is? It was brought to my attention in a prescription written by a St. Louis physician, but I am unable to find any literature on the subject.

Stephen Fisher, M.D., New Salem, N. D.

Answer.—Adalin is bromdiethyl-acetylcarbamid, and is described in New and Nonofficial Remedies, 1919, page 64. It is said to be an efficient sedative, reducing excitement and promoting sleep in conditions in which a powerful hypnotic is not required.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 8. Chairman, Dr. S. W. Welch, State Capitol, Montgomery.

ARIZONA: Phoenix, July 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

CALIFORNIA: San Francisco, June 23-26. Sec., Dr. Charles B. Pinkham, 904 Forum Bldg., Sacramento.

COLORADO: Denver, July 2. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, July 8-9. Sec., Regular Bd., Dr. Charles A. Tuttle, 196 York St., New Haven; Sec., Homeopathic Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven; Sec., Eclectic Bd., Dr. James E. Hair, 730 State St., Bridgeport.

DELAWARE: Wilmington, June 17-19. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

DISTRICT OF COLUMBIA: Washington, July 8-10. Sec., Dr. E. P. Copeland, The Rockingham, Washington.

FLORIDA: Jacksonville, June 16-17. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.

FLORIDA: Eclectic Board, Jacksonville, June 9-10. Sec., Dr. G. A. Munch, 1306 Franklin St., Tampa.

ILLINOIS: Chicago, June 16-19. Supt. of Registration, Mr. F. C. Dodds, Springfield, Ill.

IOWA: Iowa City, June 12-14. Sec., Dr. Clifford H. Sumner, Capitol Bldg., Des Moines.

KANSAS: Topeka, June 17. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, July 1-3. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, July 1-3. Sec., Dr. E. W. Mahler, 141 Elk Place, New Orleans.

MAINE: Augusta, July 1-2. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MARYLAND: Baltimore, June 18-21. Sec., Dr. J. McP. Scott, Hagerstown.

MASSACHUSETTS: Boston, July 8-10. Sec., Dr. Walter P. Bowers, State House, Boston.

MICHIGAN: Ann Arbor, June 10-12. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSISSIPPI: Jackson, June 24-25. Sec., Dr. W. S. Leathers, University.

MISSOURI: St. Louis, June 9-11. Sec., Dr. George H. Jones, State House, Jefferson City.

NEBRASKA: Lincoln, June 30-July 2. Sec., Dr. H. J. Lehnhoff, 514 First National Bank, Lincoln.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. Alex. MacAlister, 438 E. State St., Trenton.

NEW MEXICO: Santa Fe, July 14. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 24-27, Mr. George M. Wiley, director, Exam. and Inspections Div., State Edu. Bldg., Albany.

NORTH CAROLINA: Raleigh, June 23. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

NORTH DAKOTA: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, July 8-9. Sec., Dr. J. J. Williams, Weatherford.

OREGON: Portland, July 1-3. Sec., Dr. Frank W. Wood, 559 Morgan Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 8-10. Sec., Nathan C. Schaeffer, State Capitol, Harrisburg.

RHODE ISLAND: Providence, July 10-11. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH CAROLINA: Columbia, June 10. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

SOUTH DAKOTA: Deadwood, July 8. Sec., Dr. P. B. Jenkins, Waubay.

TENNESSEE: Knoxville, Memphis and Nashville, June 13-14. Sec., Dr. A. B. De Loach, Exchange Bldg., Memphis.

TEXAS: Austin, June 24-26. Sec., Dr. M. F. Bettencourt, Mart.

UTAH: Salt Lake City, July 7-8. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, June 26-28. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 17-20. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

WASHINGTON: Seattle, July 1-3. Sec., Dr. C. N. Suttner, 415 Old National Bank Bldg., Spokane.

WEST VIRGINIA: Huntington, July 8-10. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

WISCONSIN: Milwaukee, June 24-26. Sec., Dr. J. M. Dodd, 220 E. 2nd. St., Ashland.

WYOMING: Cheyenne, June 23-25. Sec., Dr. H. E. McCollum, Laramie.

Massachusetts January Examination

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, Dec. 31, 1918, Jan. 2, 16 and 17, 1919. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Five candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surg.		(1913)	75
Maryland College of Eclectic Medicine and Surg.		(1914)	75
New York Homeopathic Medical College		(1894)	75
Medical College of Ohio		(1906)	80.4
Vanderbilt University		(1912)	81.5

Rhode Island April Examination

Dr. B. U. Richards, secretary of the Rhode Island State Board of Health, reports the written and practical examination held at Providence, April 3-4, 1919. The examination covered 7 subjects, and included 70 questions. An average of 80 per cent. was required to pass. Of the 7 candidates examined, 3 passed and 4 failed. The following colleges were represented.

College		Year Grad.	Per Cent.
	PASSED		
Yale University		(1915)	93.9
Tufts College		(1916)	83.7
University of Vermont		(1911)	89.5
	FAILED		
University of Maryland		(1917)	75.7
Tufts College		(1917)	78.2
College of Physicians and Surg. Memphis		(1911)	78.8
Laval University		(1912)	75.5

Book Notices

NOTES ON PATHOLOGICAL AND OPERATIVE OBSTETRICS. By Lyle G. McNeile, M.D., Professor of Obstetrics, College of Physicians and Surgeons, Medical Department of the University of Southern California. Cloth. Price, $2. Pp. 221. Los Angeles: The Division of Obstetrics, College of Physicians and Surgeons, Medical Department of the University of Southern California, 1919.

The effort of the author has been to correlate "the essentials of pathologic obstetrics, presented in such a form as may, perhaps, be suitable for senior medical students, or for busy practitioners." This he has accomplished in a thorough manner. The book is apparently based on the published notes of the late Herbert M. Stowe, which the author has amplified and brought up to date. New subject matter has been added, especially on the topic of cesarean section, concerning which a criticism of his stand on repeated section might justly be made. "Once a cesarean, always a cesarean" has not become the accepted dogma, although McNeile adopts it.

A little more care might have corrected numerous typographic errors.

LA SUSPENSION DANS LE TRAITEMENT DES FRACTURES. Appareils Anglo-Américans. Par P. Desfosses, Chirurgien de l'Hôpital brittannique de Paris et Charles-Robert, Ancien Interne des Hôpitaux de Paris. Préface de M. Pierre Duval. Paper. Price, 4 francs. Pp. 172, with illustrations. Paris: Masson et Cie, 1918.

Although this little monograph was written primarily for the army surgeon, the principles enunciated are as applicable to industrial accidents as they are to the accidents of war. The theme is the use of suspension in the treatment of fractures. The method of applying suspension, with traction, to suitable fractures of the upper and lower extremities, should it be thought desirable, is discussed with great care and illustrated profusely. The principle of the Thomas splint is made use of extensively and various modifications of the splint to meet the necessities of particular cases are clearly set forth.

Those who are handling fractures will find many useful suggestions in this little volume.

AN INQUIRY INTO THE MEDICAL CURRICULUM BY THE EDINBURGH PATHOLOGICAL CLUB. Papers Contributed to the Inquiry and Report by the Pathological Club. Reprinted from the Edinburgh Medical Journal. Boards. Pp. 512. Edinburgh: W. Green & Son, 1919.

This volume is a reprint of a series of articles which appeared in the *Edinburgh Medical Journal* beginning January, 1918. The general topic was "The Training of the Student of Medicine." The series was completed in March, 1919. The reprint contains also the extensive discussions which followed the reading of the several articles before the Royal Medical Society and the Edinburgh Pathological Club. Seventy-two papers are included. There is also a report of the Pathological Club, giving an outline of the proposed courses of instruction in the various branches of the medical curriculum. This series of papers deserves a careful reading by all who are interested in the development of the curriculum in medical schools.

Medicolegal

Prescriptions Under Harrison Narcotic Drug Act

(Foreman v. United States (U. S.), 255 Fed. R. 621)

The United States Circuit Court of Appeals, Fourth Circuit, holds that an indictment was sufficient which charged in substance that the defendant did dispense, distribute and sell a derivative of opium to the persons named without a written order and not in the course of his professional practice. But the court reverses a judgment of conviction of defendant Foreman, on such an indictment, for error in the following instruction to the jury:

> And the court further charges you, as a matter of law, that the issuing of prescriptions by a registered physician to persons other than his patients, and in the course of his professional practice only, whereby they could procure and did procure the inhibited drugs, is a sale, a dispensing and distribution, of such drugs within the meaning of the act of Congress under which the accused is being prosecuted.

The court says that, resolving all conflicting testimony against the defendant, no direct sale, barter, exchange, or gift, and no dispensing or distribution that would denote participation in a sale, barter, exchange, or gift by him, was proved. He registered and paid the tax. Afterward he gave prescriptions for morphin and cocain to the persons named in the indictment, who were drug addicts, calling for such quantities of the drugs as to indicate that he was merely gratifying the craving of the addicts and that he was not seeking to cure them of the habit. The drugs were not furnished by the defendant. On the contrary, the prescriptions were carried by the recipients to different registered druggists and by them filled. There was no evidence that the defendant was interested in the business of any of the druggists, or had any arrangement to share the profits of the sales with them, or that he was agent for any druggist, or that he even knew where the prescriptions were to be carried. What the statute forbids is sale, barter, exchange, or gift, including such distribution and dispensing by a physician not in the course of his practice as would amount to a participation in a sale, barter, exchange, or gift. The mere issuance of a prescription by a physician to be filled by any druggist, without participation by the physician in the sale made under it, would not be a sale as charged in the indictment, or such distribution or dispensing as amounts to a sale. The instruction quoted was therefore erroneous.

Constitutionality of Harrison Narcotic Drug Act

(United States v. Doremus (U. S.), 39 Sup. Ct. R. 214)

The Supreme Court of the United States holds the Harrison Narcotic Drug Act to be constitutional, reversing a judgment of a district court in Texas which held Section 2 of the act unconstitutional for the reason that it was not a revenue measure, and was an invasion of the police power reserved to the states. The first count in the indictment charged in substance that the defendant, a physician, duly registered, and who had paid the tax required by the first section of the act, did unlawfully sell to one Ameris 500 one-sixth grain tablets of heroin, not in pursuance of a written order on a form issued on the blank furnished for that purpose by the commissioner of internal revenue. The second count charged that the defendant did unlawfully and knowingly sell, dispense and distribute to Ameris 500 one-sixth grain tablets of heroin not in the course of his regular professional practice and not for the treatment of any disease from which Ameris was suffering, but for the purpose of gratifying Ameris' appetite for the drug as a habitual user thereof.

The Supreme Court says that the act may not be declared unconstitutional because its effect may be to accomplish another purpose as well as the raising of revenue. If the legislation is within the taxing authority of Congress, that is sufficient to sustain it. Considering the full power of Congress over excise taxation the decisive question here is: Have the provisions in question any relation to the raising of revenue? That Congress might levy an excise tax on such dealers, and others who are named in Section 1 of the act, cannot be successfully disputed. The provisions of Section 2 aim to confine sales to registered dealers and to those dispensing the drugs as physicians, and to those who come to dealers with legitimate prescriptions of physicians. Congress, with full power over the subject, short of arbitrary and unreasonable action, which is not to be assumed, inserted these provisions in an act specifically providing for the raising of revenue. Considered of themselves, the Supreme Court thinks they tend to keep the traffic aboveboard and subject to inspection by those authorized to collect the revenue. They tend to diminish the opportunity of unauthorized persons to obtain the drugs and sell them clandestinely without paying the tax imposed by the federal law. This case well illustrates the possibility which may have induced Congress to insert the provisions limiting sales to registered dealers and requiring patients to obtain these drugs as a medicine from physicians on regular prescriptions. Ameris, being as the indictment charged, an addict, may not have used this great number of doses for himself. He might sell some to others without paying the tax; at least Congress may have deemed it wise to prevent such possible dealings because of their effect on the collection of the revenue. The Supreme Court cannot agree with the contention that the provisions of Section 2, controlling the disposition of these drugs in the ways described, can have nothing to do with facilitating the collection of the revenue, as it would be obliged to do if it were to declare this act beyond the power of Congress acting under its constitutional authority to impose excise taxes.

The Chief Justice and three other members of the Court dissent because of the opinion that the Court below correctly held the act of Congress, so far as it embraced the matters complained of, to be beyond the constitutional power of Congress to enact, because to such extent the statute was a mere attempt by Congress to exert a power not delegated, that is, the reserved police power of the states.

Answers to Questions on Harrison Narcotic Drug Act—What Not a Prescription

(Webb et al. v. United States (U. S.), 39 Sup. Ct. R. 217)

The Supreme Court of the United States says that this case came before it on a certificate from the Circuit Court of Appeals for the Sixth Circuit, from which certificate it appeared that Webb and one Goldbaum were convicted and sentenced in the District Court for the Western District of Tennessee on a charge of conspiracy to violate the Harrison Narcotic Law. The certificate stated that Webb was a practicing physician who had duly registered and paid the special tax as required by Section 1 of the act. Goldbaum was a retail druggist, and had also registered and paid such tax and kept all records required by the law. It was Webb's regular custom and practice to prescribe morphin for habitual users, on their application to him therefor. He furnished these "prescriptions," not after consideration of the applicant's individual case, and in such quantities and with such direction as, in his judgment, would tend to cure the habit, or as might be necessary or helpful in an attempt to break the habit, but with such consideration and rather in such quantities as the applicant desired for the sake of continuing his accustomed use. Goldbaum was familiar with such practice and habitually filled such prescriptions. Within a period of eleven months Goldbaum purchased from wholesalers thirty times as much morphin as was bought by the average retail druggist doing a larger general business, and he sold narcotic drugs in 6,500 instances. Webb regularly charged fifty cents for each so-called prescription, and within this period had furnished, and Goldbaum had filled, over 4,000 such prescriptions.

On these and other facts stated, the Circuit Court of Appeals propounded to the Supreme Court three questions:

> 1. Does the first sentence of Section 2 of the Harrison Act prohibit retail sales of morphin by druggists to persons who have no physician's prescription, who have no order blank therefor and who cannot obtain an order blank because not of the class to which such blanks are allowed to be issued?
>
> 2. If the answer to question one is in the affirmative, does this construction make unconstitutional the prohibition of such sale?
>
> 3. If a practicing and registered physician issues an order for morphin to a habitual user thereof, the order not being issued by him in

the course of professional treatment in the attempted cure of the habit, but being issued for the purpose of providing the user with morphin sufficient to keep him comfortable by maintaining his customary use, is such order a physician's prescription under exception (*b*) of Section 2?

The Supreme Court answers that what it has said of the construction and purpose of the act in *United States* v. *Doremus*, 39 Sup. Ct. R. 214, plainly requires that Question 1 should be answered in the affirmative. Question 2 should be answered in the negative for the reasons stated in the opinion in said case. As to Question 3—to call such an order for the use of morphin a physician's prescription would be so plain a perversion of meaning that no discussion of the subject is required. That question should be answered in the negative.

Registration and Tax Requirements of Harrison Act

(*Blunt v. United States* (*U. S.*), *255 Fed. R. 332*)

The United States Circuit Court of Appeals, Seventh Circuit, in affirming a conviction of defendant Blunt, a physician, on a count that charged that he, as a dealer, unlawfully and feloniously sold to one Dean 2,000 grains of morphin sulphate, without having registered as a dealer and without having paid the special tax as such dealer, says that while the Harrison Narcotic Drug Act does not, in express words, require a separate registration and payment of tax as dealer and as physician, there is a clear differentiation between them as to the obligations imposed on them respectively under the act. They represent distinct classes; each class is required to pay the tax. And the combination of both occupations in one individual does not exempt him from payment of a separate tax as a dealer and as a physician. Section 3236 of the Revised Statutes of the United States, as a provision of existing law relating to special taxes, is expressly made applicable to the special tax imposed under Section 1. It provides that:

> Whenever more than one of the pursuits or occupations hereinafter described are carried on in the same place by the same person at the same time, except as hereinafter provided, the tax shall be paid for each according to the rates severally prescribed.

Furthermore, in accordance with the power vested in him under this Section 1, the commissioner of internal revenue, with the approval of the secretary of the treasury, made a regulation to the same effect, namely:

> Every person conducting more than one class or place of business or practicing more than one profession, or at more than one place, in which the narcotic drugs are sold, dispensed or given away, must register and pay the special tax for each profession and business separately, even though conducted at the same address, and separate records must be kept under each registration.

"A sale, dispensing or distribution" is permitted to a dealer for a customer on a written prescription; but only "a dispensing or distribution" is allowed to a physician treating a patient, and then only in the course of his professional practice.

A portion of Article 10 of the Revised Regulations of the Treasury Department, as of May 4, 1916, contained in Internal Revenue Regulations, No. 35, reads:

> A physician, dentist, or veterinary surgeon may not engage in the business of selling narcotic drugs unless he is a registered dealer, authorized by the state laws to engage in such business. Additional registration is not required, however, when narcotic drugs are sold to a patient on whom a physician, dentist, or veterinary surgeon is in personal attendance.

These sentences are to be construed in the light both of Article 1 and of that part of Article 10 immediately preceding the quoted sentences. So construed, the regulations clearly require a physician who acts as a dealer to register as such; but a sale to one in the course of his personal attendance on him as a physician does not necessitate registration as a dealer.

The sale here contemplated is a sale by him not as a dealer but as a physician; instead of "dispensing, distributing or administering" a dose of the narcotic as a part of his medical service, without a separate charge therefor, it may be that in some places physicians are accustomed to charge specifically therefor. While this might well be deemed a dispensing, yet as it could be held to be a sale, the regulations out of abundant caution provide that in such a case, doubtless because the physician is not then acting as a dealer, no additional registration is required.

In the instant case, however, the indictment charged and the evidence abundantly proved that, though the purchaser was registered as a patient, the sale was made to him by the defendant acting as a dealer, and not as a physician in personal attendance, administering or dispensing the drug as part of the professional service.

Social Medicine, Medical Economics and Miscellany

The Russell Sage Institute of Pathology

The Russell Sage Institute of Pathology was founded in 1907 by Dr. Theodore C. Janeway through funds obtained by him from Mrs. Russell Sage. The first president of the board of directors was Dr. E. G. Janeway, who held office until his death in 1910. Associated with the Janeways from the beginning were Drs. D. Bryson Delavan, Simon Flexner and Graham Lusk, as directors. On the death of Dr. E. G. Janeway, Dr. Lafayette B. Mendel was elected in his stead; and on the death of Dr. T. C. Janeway, in 1918, Dr. E. F. Du Bois was chosen to fill the vacancy.

The institute was originally located (1907-1912) at the New York City Hospital and the New York City Home, with Dr. Horst Oertel as scientific director. In 1912, the institute was transferred to Bellevue Hospital, Graham Lusk having been appointed scientific director, and Dr. Eugene F. Du Bois, medical director of the reorganized institute. Dr. F. C. Gephart became chemist to the institute.

The construction of a respiration calorimeter of the Atwater-Rosa type by the skilled mechanics, Messrs. Soderstrom and Riche, achieved an instrument of such accuracy that the hourly heat production of an individual, as directly measured, agreed within a slight variation with the calculation of the amount of heat as estimated from the quantity of oxygen absorbed. This apparatus was the first accurate respiration calorimeter established in any hospital. The work at first concerned itself with the establishment of a standard of measurement of the basal metabolism of normal persons from youth to old age, and the divergence from this standard of metabolism which was induced by food. In association with Dr. Warren Coleman, the metabolism during typhoid fever was exhaustively studied. Dr. Francis W. Peabody of Boston visited the institute and was associated with the study of patients with cardiac and renal disease. Dr. Frederic M. Allen of the Rockefeller Institute contributed to the extensive metabolism studies on diabetes. Dr. J. H. Means of the Massachusetts General Hospital aided in the work concerning the effect of radium therapy on lymphatic leukemia, and concerning the stimulating effect of caffein on normal metabolism. To these may be added the extensive investigation into the nature of the metabolism of exophthalmic goiter by Du Bois and into the metabolism in malarial fever by Drs. D. P. Barr and Du Bois. In the last described paper, the twenty-eighth and the one last published in the series entitled "Clinical Calorimetry," appearing in the *Archives of Internal Medicine*, it was announced that the heat loss from the body at the onset and during the chill remained unchanged from the level determined before the chill, and that the extra heat produced by the muscular contractions during the chill was retained in the body and was the immediate cause of the rise of body temperature.

The beginning of the war brought the work of the institute to an abrupt close, and there remain a few unpublished papers and some uncompleted work on the nature of night sweats in tuberculosis.

Before the war it had been arranged to open the institute in October, 1917, with Dr. Homer F. Swift as scientific director, who was also to have been director of medicine on the Cornell division of Bellevue Hospital. Associated with him were to have been Drs. W. W. Palmer, J. P. Peters, Jr., and

D. P. Barr. The project constituted an attempt to demonstrate the feasibility of establishing a great clinic based on medical research in connection with the largest municipal hospital in the country.

It is of happy augury for the future of American medicine that Col. Homer F. Swift, who is well known for his work in France on trench fever and who is now chief consulting physician to our army of occupation with headquarters at Coblenz, will return to take charge of the Russell Sage Institute in the capacity of scientific director, and that both Drs. Peters and Barr have already returned from France and have taken up the work. It is with grateful appreciation that one recognizes that the good that Mrs. Sage has done lives after her and witnesses the beneficent influence of her lifelong and often expressed desire to "relieve the sufferings and advance the welfare of mankind."

Study of Infant Mortality in Brockton

Brockton, Mass., was selected as the fifth unit in the studies of infant mortality being conducted by the National Children's Bureau because it is an industrial city with an infant mortality rate notably lower than the average rate for the registration area, and because it is a city of a single industry, the shoe industry, whose skilled operatives are employed at comparatively high wages, and trade union conditions prevail. The general death rate has shown a steady decrease from year to year. From 1910 to 1913, inclusive, Brockton had the lowest death rate of those cities of the state with a population of not less than 50,000; and from 1901 to 1910, inclusive, it had the lowest average annual death rate in cities of this group. The city also has a higher percentage of children in the high schools than other cities of the state of its class. Of the 1,247 registered births in the study, thirty-seven, or 3 per cent., were stillbirths. The deaths among the live-born infants numbered 117, giving an infant mortality rate of 96.7 for the year studied, Nov. 1, 1912, to Oct. 31, 1913. Nearly half the deaths occurred in the first month, and as many before the end of the first day as between the ages of 6 and 12 months; one third occurred in the first week, and more than one fifth before the infants were 1 day old. The number of stillbirths compares favorably with other towns, and is lower than that of some cities. The preponderance of early deaths from causes tabulated as diseases peculiar to early infancy, premature birth, congenital debility and injuries at birth, and the stillbirths, would point to the importance of prenatal care in their prevention. All but 19.7 per cent. of the infants who survived long enough to be fed at all were breast fed wholly or partially for some period of the first nine months of life; but of these, the number breast fed surviving by months from one to nine dwindled from 78.5 in the first month to 33.2 in the ninth. Deaths by months among 1,000 survivors compared between breast fed and artificially fed infants showed for the former during the first month 17.3 and for the latter, 30. This dwindled to 2.7 for the former and 5.2 for the latter during the period including the tenth, eleventh and twelfth months. As is usually the case, artificial feeding was practiced more extensively among native-born mothers. The economic status of the family, whether the mother worked or not, the diminution of income by slack time or illness, number in family, etc., were all found to be factors affecting the infant mortality. Civic conditions, such as milk and water supplies, sewage and garbage disposal, cleanliness of streets, housing, and smoke nuisance, were above the average, or at least in a satisfactory state. Alcohol was not a prominent factor in morbidity, as Brockton had a no-license law. The conclusion of the report is that while the infant mortality rate for Brockton was low for the period named as compared with other cities of like population under similar climatic conditions, owing to the high wages paid and the intelligence of the workers, and the fact that very few mothers were gainfully employed away from home, as well as to the generally good municipal sanitation, yet the rate as compared with that of other cities of similar size and general type of population does not seem to be commensurate with the advantages enjoyed.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 9-13.

American Academy of Medicine, Atlantic City, June 9-10.
American Association of Anesthetists, Atlantic City, June 9-10.
Am. Assn. of Genito-Urinary Surgeons, Atlantic City, June 16-17.
Am. Assn. of Indust. Physicians and Surgeons, Atlantic City, June 9.
Am. Assn. of Pathologists & Bacteriologists, Atlantic City, June 16-17.
American Association of Physicians, Atlantic City, June 16-17.
American Climatological & Clin. Assn., Atlantic City, June 14-17.
American Dermatological Association, Atlantic City, June 16-18.
American Gastro-Enterological Assn., Atlantic City, June 9-10.
American Gynecological Society, Atlantic City, June 14.
American Medico-Psychological Assn., Philadelphia, June 18-20.
American Neurological Association, Atlantic City, June 16-18.
American Ophthalmological Society, Atlantic City, June 16-17.
American Orthopedic Association, Atlantic City, June 16-17.
American Otological Society, Atlantic City, June 16-17.
American Pediatric Society, Atlantic City, June 16-18.
American Proctologic Society, Atlantic City, June 7-9.
American Psychopathological Association, Atlantic City, June 19.
American Society of Tropical Medicine, Atlantic City, June 16-17.
American Surgical Association, Atlantic City, June 16-18.
Assn. for the Study of Internal Secretions, Atlantic City, June 9.
Congress American Phys. & Surgs. of N. A., Atlantic City, June 16-17.
Maine Medical Association, Portland, June 18-19.
National Tuberculosis Association, Atlantic City, June 14-17.
Nevada State Medical Association, Lake Tahoe, June 20-21.
New Jersey Medical Society, Spring Lake, June 24-25.
North Dakota State Medical Association, Grand Forks, June 24-25.
Southern Minnesota Medical Assn., Rochester, June 23-24.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

May, 1919, 3, No. 3

*Complement Fixation Reaction as Applied to Tuberculosis. P. A. Lewis, Philadelphia.—p. 129.
*Influence of Protein Intoxication on Tuberculous Infection in Guinea-Pigs. A. K. Krause and H. S. Willis, Maryland.—p. 153.
*Changes in Skin Sensitiveness to Tuberculin During Epidemic Influenza. A. L. Bloomfield, and J. G. Mateer, Baltimore.—p. 166.
*Treatment of Acute Lung Abscess by Artificial Pneumothorax. B. Goldberg, and M. Biesenthal, Chicago.—p. 169.
Treatment of Tuberculous Cervical Adenitis. W. R. Abbott, Springfield.—p. 175.

Complement Fixation Reaction in Tuberculosis.—Lewis reports the results of studies that aimed primarily to determine, if possible, the lack of harmony that characterized the experience of different workers in the application of the complement fixation tests to tuberculosis. Lewis' investigations dealt mainly with such matters as the reaction time, the measure of completely bound complement, and titration against the antigen. He confirms the observations of others that certain tuberculous individuals give strong deviation reaction, while others entirely fail to react and certain apparently wholly normal persons also give strong reactions. His most important practical conclusion is that the numerical relations are such as to make it unsafe to apply the reaction to the diagnosis of tuberculosis, except as a matter of the most limited confirmatory interest. Methods hitherto applied in making the test have inherent defects that seriously impair its significance; but these have been remedied to a considerable extent by increasing the time of primary incubation or "period of fixation" to four hours and by employing several quantities of either complement or antigen simultaneously. By adding an equal quantity of glycerin the deviating qualities of tuberculous serums are reasonably well preserved, so that a temporary standard for the determination of the qualities of antigen may be established.

Influence of Protein Intoxication on Tuberculous Infection.—Krause and Willis continued their studies on whether infection with tubercle bacilli or already present tuberculous infection is modified by acute or chronic protein intoxication. Guinea-pigs that received continued and repeated infections

of (homologous) tuberculo-protein and (heterologous) egg-white protein before infection were apparently less resistant to infection. After infection is established the repeated infections of heterologous protein (egg-white) did not appreciably influence the course of the infection. Repeated anaphylactic shock under the same conditions had no apparent influence on an already established infection. In the absence of specific tubercle the most intensive and frequently repeated application of tuberculo-protein failed to render the animals cutaneously hypersensitive. If tubercle was present, the repeated applications of heterologous protein (egg-white) had no effect on the cutaneous hypersensitiveness that had been produced by the tuberculous infection.

Skin Sensitiveness to Tuberculin During Influenza.—Bloomfield and Mateer have employed the cutaneous (Pirquet) tuberculin test on patients at the height and after the subsidence of acute influenza. Of nineteen cases so studied, all but one patient showed a complete inhibition of reactive capacity during the manifestation of symptoms of acute influenza. During convalescence reactivity returned in 89.4 per cent. of the cases. The return to maximum reactivity was gradual in most cases, as shown by successive tests. In ten of the cases, the first test made during the febrile stage was negative, while during convalescence it became markedly positive. In six, in which the temperature became normal on the day on which the test was done, or on the following day, there was a very slight reaction; and these were regarded as delayed and depressed reactions, since all these individuals later responded with prompt and strongly positive reactions.

Artificial Pneumothorax Treatment of Acute Lung Abscess.—Golberg and Biesenthal believe that this method offers distinctly better advantage of success than the ordinary medical and surgical procedures heretofore used. Collecting the sixteen cases thus far reported as having been treated by artificial pneumothorax, including the three in their own experience, the authors find that 75 per cent. of the patients have made a complete recovery, 12 per cent. have been improved, and 12 per cent. have died.

Annals of Medical History, New York

December, 1917, **1**, No. 4

First Printed Documents Relating to Modern Surgical Anesthesia. W. Osler, Oxford, Eng.—p. 329.
Byzantine Medical Fragments. C. Singer, Oxford, Eng.—p. 333.
Legislative and Administrative History of Medical Department of U. S. Army During Revolution (1776-1786). W. O. Owen, Washington.—p. 342.
The New York Medical College. A. Jacobi, New York.—p. 368.
Studies in Paleopathology. I. General Consideration of Evidences of Pathologic Conditions Found Among Fossil Animals. R. L. Moodie, Chicago.—p. 374.
Plague Tractates. D. W. Singer and R. Levy, Oxford, Eng.—p. 395.
Medical Phrases of Victor Hugo. H. A. Royster, Raleigh, N. C.—p. 412.

Boston Medical and Surgical Journal

May 22, 1919, **180**, No. 21

*Chordoma. E. M. Daland, Boston.—p. 571.
The Cancer Problem. F. Bryant, Worcester.—p. 576.
Rotation Deformities. C. L. Lowman, Los Angeles.—p. 581.
Articular Separation of Middle and Internal Cuneiforms with and without Fracture. F. W. O'Brien, Boston.—p. 585.
Hernia of Small Bowel into the Rectum. A. T. Downing, Littleton, N. H.—p. 586.
Case of Successfully Operated Wound of Heart. E. G. Crabtree, Boston.—p. 588.

Chordoma.—Daland cites the case of a woman, aged 30, who complained of hoarseness, headache and a swelling in the right side of the neck. Three years ago the patient suddenly became hoarse without any apparent cause. The hoarseness cleared up in three days and there was no further trouble for a year. Two years ago a severe headache developed and the hoarseness reappeared. Two days after manipulation by an osteopath a swelling appeared in the right postcervical region. Tinnitus was noticed in the right ear soon after this and it has persisted. One year ago the patient's right clavicle became more prominent and she was unable to lift her arm laterally over her head. The mass in the right postcervical region has increased in size and has at times been painful. Recently she has been nauseated frequently and has vomited occasionally, more in the morning. Behind and slightly below the right ear, extending downward on the neck and backward nearly to the median line was a mass the size of a hen's egg, firm, non-tender, and non-fluctuant. An incision was made over the growth and colloidlike material curetted out with free hemorrhage. Seven months after the operation the patient stated that her headaches had enirely disappeared. There is a recurrence of the mass in her neck and she has some pain. Microscopic sections from the tumor contained cells which tend to differentiate like those of the notochord. Much of its structure is of the embryonic type and resembles mucous connective tissue. Daland says that seventeen cases of tumors of notochordal tissue which have given clinical symptoms are recorded. Twelve of these are over the upper end and five over the lower end of the neural canal. Two of the seventeen patients have been successfully operated on. Death followed in the others. The case cited is the seventeenth case of chordoma. Although showing involvement of several cranial nerves, the patient is still alive.

Colorado Medicine, Denver

May, 1919, **16**, No. 5

Water Hemlock Poisoning. M. R. Stratton, Denver.—p. 104.
*Method of Hemostasis in Resecting Portions of Liver. L. Freeman, Denver.—p. 111.
Diet in Diseases of Blood and in Diseases of Thyroid. J. W. Amesse, Denver.—p. 113.
Influenza Vaccination at Denver City and County Hospital. M. Katzman, Denver.—p. 121.

Method of Hemostasis in Resecting Portions of Liver.—While removing a tumor from the liver hemorrhage was controlled by Freeman by tying off the part to be removed by means of two long narrow strips of fascia lata, like pieces of tape. These strips were first pulled directly through the substance of the liver, from behind forward, with a pair of long alligator forceps, and their respective ends tied very tightly around the hepatic substance to either side. The growth was then cut away, well within healthy liver tissue, without the slightest difficulty or bleeding, in spite of the great thickness of the hepatic stump.

Illinois Medical Journal, Chicago

May, 1919, **35**, No. 5

Corpus Luteum in its Relation to Amenorrhea, Sterility, Abortion, and Pseudo Extra-Uterine Pregnancy. E. H. Ochsner, Chicago.—p. 225.
Goiter. E. P. Sloan, Bloomington.—p. 226.
Retropharyngeal Abscess in Children: Case Reports. H. E. Irish, Chicago.—p. 227.
Final Report of Quackery Committee Appointed by Douglas Park Branch of Chicago Medical Society. H. R. Krasnow, Chicago.—p. 231.
Robert Jones Operation for Talipes Equino Varus. L. H. Zeuch, Chicago.—p. 241.
Extra-Uterine Pregnancy. F. F. Wisniewski, Chicago.—p. 246.
Clinical Aspect of Diagnosis of Diseases of Alimentary Tract. A. A. Goldsmith, Chicago.—p. 249.
*Case of Bilateral (Double) Spontaneous Pneumothorax. E. A. Gray, Chicago.—p. 252.

Case of Bilateral (Double) Spontaneous Pneumothorax.—Gray reports the case of a man, aged 32 years, a victim of pulmonary tuberculosis who had a violent coughing spell, marked by a sudden pain in the right side and followed shortly by dyspnea. The diagnosis of spontaneous pneumothorax, right, was made. Aspiration of the right chest was immediately done and 2,000 c.c. of air withdrawn; the patient promptly rallied and became comfortable. Ten hours later, it became necessary to aspirate again. The escape of air from the lung increased and it was soon found necessary to aspirate at shorter intervals. Because of extensive disease of the left, lung, the latter did not contain enough aerating tissue to sustain life. Nevertheless, to determine the point, the trocar was allowed to remain open in the chest wall on the pneumothorax side, creating, in effect, an open pneumothorax. Within a very few minutes the patient showed great distress and aspiration was done. Effusion soon appeared and this, in a short time, showed infection. The amount of fluid soon became great and required frequent aspiration. Air began to diminish in quantity. On the fourteenth day a

fistula occurred in a needle track. The skin opening was fortunately trapped and, while coughing, expelled air and fluid (pus and seropus), there was no inhalation through the sinus. It was now decided to attempt to bring the lung down; to this end, continuous siphon drainage was established, with the result that, by June 18 (the twenty-third day) breath sounds were heard over the right upper lobe as far down as the third rib, and respiration became much easier and the patient was able to lie on the pneumothorax side. On the seventh day an extensive emphysema occurred and involved the chest, abdomen, scrotum, penis, neck and face. June 19 the patient complained of shortness of breath; aspiration of the right chest was done, but little relief was afforded. The trocar found the base of the lung in the fourth space. Examination of the left lung showed diminution of breath sounds. June 20 the patient was found to be much worse. While fair respiration was being performed by the right lung, the left lung presented no sounds whatever. The patient complained of some pain in the left lung, but of very little dyspnea. Aspiration of the left chest relieved the patient of 1,800 c.c. air, but did not improve the general condition. He was comfortable until his death, which occurred twenty-four hours after the second rupture.

Indiana State Medical Association Journal, Fort Wayne

May, 1919, **12**, No. 5

War Neuroses. C. D. Humes, U. S. A.—p. 123.
Medical Empiricism and Pathology of Chronic Head and Throat Infections. O. C. Breitenbach, Columbus, Ind.—p. 125.
*Club Feet. H. R. Allen, Indianapolis.—p. 130.
Bacillus Fusiformis Infection; Report of Case. S. R. Edwards, Indianapolis.—p. 132.

Treatment of Club Feet.—As to the treatment of club feet, Allen says that he would not under any conditions ever touch a bone with any kind of a surgical instrument, nor would he make a skin incision longer than one-eighth of an inch, nor use a Thomas wrench. The treatment he employs consists of surgery and proper bracing. The adduction and pes cavus are first reduced by cutting the flexor brevis and fascia, if necessary, then forcibly shred or tear all other soft tissues resisting the extreme limits of normal abduction and planus positions. The second step is to cut obliquely the tendo-achilles and then forcibly convert the equino-varus into a valgo-calcaneous position. If the surgery and manipulation have been thorough and complete, then the little finger will easily convert the adducto-cavo-varo-equinus into an extreme position of abducto-plana-valgo-calcaneus and then but little resistance will be encountered in retaining this position. The next step is the application of braces. There are two kinds of braces, and two periods for using them. The first brace is the retention brace. It is used both day and night at the beginning, being removed for bathing and massage. The period of wearing braces varies. People between 35 and 60 years wear braces for an entire year. Younger patients wear them a shorter time. The retention brace is worn day and night until the foot shows no tendency to return to its original deformity, after being absolutely unbraced for a number of hours. When this point is reached, the walking brace may be employed during the day and the retention brace used only at night. The retention brace must hold the foot and femur about parallel. The tibia and femur should be so flexed on each other that the papliteal angle thus formed is considerably less than a right angle. The brace must also secure the exact counterparts of each of the original deformities. It is also important to understand that in order to produce ultimately a normal foot with normal ranges of movement that these extreme normal ranges must be secured during the process of correction. The time necessary for operation and application of the retention brace is usually ten or twelve minutes.

Iowa State Medical Society Journal, Des Moines

May, 1919, **9**, No. 5

Pathology of Streptococcus Infection of Lungs. D. J. Glomset, Camp Dodge.—p. 143.
Fractures Complicating Ankle Joint. A. P. Stoner, Des Moines.—p. 148.
Plastic Surgery of Peripheral Nerves. J. A. Dales, Sioux City.—p. 155.
Fractures Complicating Joints of Upper Extremities. C. S. James, Centerville.

Journal of Infectious Diseases, Chicago

January, 1919, **24**, No. 1

*Antibodies in Fetus. H. W. Sherman, Chicago.—p. 1.
Characteristics of Some Bacteria on Simple Synthetic Medium. F. Hulton-Frankel, H. Barber and E. Pyle, New York.—p. 9.
Sugar Fermentations in Synthetic Mediums. F. Hulton-Frankel and H. Barber, New York.—p. 17.
Some Animal Experiments with Organisms Grown on Synthetic Medium. F. Hulton-Frankel and E. Pyle, New York.—p. 19.
*Partial Tension Streptococci and Vaccine Preparation. W. W. Oliver and O. C. Perkins, Brooklyn.—p. 22.
*Comparison of Six Different Antigens in Wassermann Reaction. E. H. Ruediger, Bismarck, N. D.—p. 31.
Transmissibility of Immunity from Mother to Offspring in Hog Cholera. C. L. McArthur, Fayetteville, Ark.—p. 45.
Resistance of Glanders Bacillus to Calcium Hypochlorite. B. Cohen, New Haven.—p. 51.
*Spirochete-Like Spiral Bodies in Bacterial Cultures. G. Koga and G. Otsubo, Tokyo.—p. 56.
*Bacterial Content of Prostate and its Relation to Prostatic Adenoma. R. Rosen, Baltimore.—p. 63.
Agglutination in Measles. R. Tunnicliff, Chicago.—p. 77.
*Simple Method for Isolation of Influenza Bacillus. E. P. Bernstein and L. Loewe, New York.—p. 78.

Antibodies in Fetus.—This paper is confined to a study of the natural antibodies of swine embryos. Included are lysins, complement and bacterial opsonins. Sherman found that in the youngest embryos complement and lysins are inappreciable. Opsonins were present but averaged only 0.04 as measured by the opsonic index. Complement and opsonins increase as the age of the fetus increases. Lysins do not appear to increase. In the amniotic fluids complement is only occasionally found; lysins and opsonins resemble closely those of the fetal serums. The conclusions of Polano and Goldmann from their work, respectively, on antitoxins and vital stains, that the amnion has a selective secretory action, seems to be unwarranted. The theory of the transudation of the amniotic fluid from the maternal serum is untenable. The amniotic fluid is probably derived almost exclusively under normal conditions as a transudation from the cord and as a secretion from the surface of the fetus. In the allantoic fluids complement was found only in the younger embryos. Lysins are found more prevalent in the earlier fluids but to a small extent also in the later.

Vaccines of Partial Tension Streptococci.—From a series of thirty-two cases of rather diverse nature partial tension streptococci were isolated by Oliver and Perkins. In one case each of asthma, pyorrhea, chorea, uterine infection and two cases of "cold abscess" growth was obtained only at partial tension. In one of the cases of "cold abscess" isolation of a very minute streptococcus was effected only by growth in an atmosphere of diminished oxygen from which the respiratory carbon dioxid was removed. In the remaining twenty-six cases, the relative luxuriance of growth at partial tension was in contrast to the meager growth obtained aerobically and, in certain cases, anaerobically. By the use of the partial tension method sufficient growth was obtained usually within twenty-four hours and never later than forty-eight hours, to allow of the preparation of an autogenous vaccine. In none of the seventeen cases in which vaccines were prepared was sufficient growth obtained aerobically or anaerobically within forty-eight hours to warrant the preparation of a vaccine.

Antigens in Wassermann Reaction.—The antigens studied by Ruediger were alcoholic extract of human heart muscle; alcoholic extract of syphilitic fetal liver; alcoholic extract of dog heart muscle; acetone insoluble antigen of dog heart muscle; acetone insoluble antigen of dog heart muscle; alcoholic extract of sheep heart muscle and acetone insoluble antigen of sheep heart muscle. He found that antigen diluted with the salt solution slowly so as to give an opalescent solution gave many more positive results with the Wassermann test than did antigen which was diluted rapidly enough to give a clear solution. Adding the antigen to the human serum before the complement gave results identical with those obtained when the complement was added before the

antigen. Antigen supposed to be alcoholic extract of syphilitic fetal liver and antigen prepared from dog heart gave many more positive results than did alcoholic extract of human heart. As no other signs or symptoms of syphilis could be detected these were considered false positive results, and these antigens were discarded as being unreliable. Antigen prepared from sheep heart gave results almost identical with those given by antigen prepared from human heart. Ruediger is convinced that the glycerol added to the human serum cannot be held responsible for the false positive results obtained. Previous absorption of the natural antidog amboceptor from the human serums did not eliminate the false positive results.

Spiral Bodies in Bacterial Cultures.—Spiral bodies resembling spirochetes were found by Koga and Otsubo in anaerobic cultures of various bacteria cultivated in the plasma-ascites medium, Noguchi's ascites-agar and Shimamine's horse serum medium. They conclude that the spiral bodies are nothing more than an unusual development of the flagella or parts of the bacterial bodies. The spiral bodies seem to be identical with Noguchi's involuted forms of Treponema macrodentium. It is suggested by the authors that it is necessary to pay special attention to motility, stainability and the pure cultivation in any study of spirochetes, when associated with other bacteria. Morphology alone is not in these cases reliable. It is further suggested that this method may be applied in the search for flagella. They have discovered the presence of flagella in B. mallei, which had been considered to have no flagellum.

Bacteria of Prostate and Adenoma.—From a series of thirty-nine cases organisms have been isolated by Rosen. The colon group of organisms was the commonest found; no one organism was found specific to the gland; not once was the gonococcus isolated. The history of the cases in this series shows that persons with a negative record as to gonococcus infection to be as susceptible to prostatic hypertrophy as those with infection. Rosen is convinced that the significance of the bacteria isolated from the prostate gland and the rôle that they may play in prostatic hypertrophy, if any (other than that they may be secondary invaders), cannot be determined from this investigation.

Isolation of Influenza Bacillus.—By the employment of gentian violet blood agar Bernstein and Loewe found the isolation of the influenza bacillus to be comparatively easy. The use of this medium gives a much higher percentage of positive results than plain blood agar. Agar was prepared with a H ion of 7.1 and a gentian-violet content of 1 : 5,000—taking a concentrated alcoholic solution of the dye as unity.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

January, 1919, **12**, No. 6

Dichlorethylsulphid ("Mustard - Gas"). I. Influence of Solvents, Adsorbents and Chemical Antidotes on Severity of Human Skin Lesions. T. Sollmann, Cleveland.—p. 303.
Id. II. Question of Induced Hypersusceptibility of Skin. T. Sollmann, Cleveland.—p. 319.
*Effect of Cocain Hydrochlorid on Co_2 Production of Mixed Nerve Fiber. S. Niwa, Chicago.—p. 323.

March, 1919, **12**, No. 8

Apparatus for Administration of Gases and Vapors to Animals. E. K. Marshall, Jr., and A. C. Kolls, Washington.—p. 385.
Dichlorethylsulphid (Mustard Gas) III; Solubility and Hydrolysis; New Method for Estimating Small Amounts. E. F. Hopkins, Washington.—p. 393.
Studies in Elimination of Certain Digitalis Bodies from Animal Organism. R. A. Hatcher and C. Eggleston, New York.—p. 405.

Effect of Cocain Hydrochlorid on CO_2 Production.—The results of Niwa's experiments support the statement that the local anesthetics, cocain hydrochlorid, affects the metabolism of the mixed nerve in exactly the same manner as do general anesthetics, namely, primary stimulation by a weaker concentration, and subsequent diminution of the CO_2 production by a higher concentration. These facts demonstrate that there is a close relationship between the rate of nerve metabolism and the state of excitability of the nerve, and suggest that anesthesia in general is probably brought about by interference with the tissue metabolism.

April, 1919, **13**, No. 1

*Dichlorethylsulphid (Mustard Gas) IV. Mechanism of Absorption by Skin. H. W. Smith, G. H. A. Clowes, and E. K. Marshall, Jr., Washington, D. C.—p. 1.
*Action of Local Anesthetics on Striated Muscle. S. Kubota and D. I. Macht, Baltimore.—p. 31.
Adenine Mononucleotide. W. Jones, and R. P. Kennedy, Baltimore.—p. 45.
Drug Action as Modified by Disease Toxins I. Oyabain Vs. Diphtheria Toxin. A. D. Bush, University of Missouri.—p. 55.
*Action of Viburnum Prunifolium. B. H. Hager and F. C. Becht, Chicago.—p. 61.

Mechanism of Absorption of Mustard Gas by Skin.—The experimental data obtained by Smith et al. indicate that mustard gas is first adsorbed by some element on or immediately adjacent to the skin surface. While a portion of the mustard passes rapidly inward to a point from which it cannot subsequently be removed, the greater portion remains on or near the surface for a considerable period, a proof of which is that it may be removed even after ten or fifteen minutes by persistent washing with organic solvents. The amount of mustard passing into the atmosphere from an exposed surface far exceeds the amount passing into the inner strata of the skin. This loss is very great at first and is still demonstrable after forty-five minutes. The time of exposure necessary to produce a positive reaction bears a definite relation to concentration and varies for different individuals. A resistant skin adsorbs far more gas than a sensitive skin, and gas may be withdrawn from the latter by the former. The difference in sensitivity of different skins is due principally to difference in saturation adsorptive capacity. The intracellular threshold concentration of gas required to produce pathologic changes in the skin is approximately the same in resistant and sensitive individauls.

Action of Local Anesthetics on Striated Muscle.—The action of a large number of local anesthetics on excised skeletal muscles of the frog and the rat was studied by Kubota and Macht. It was found that all of the substances studied depressed the excitability and the contractility of striated muscle and caused a quicker onset of fatigue. No primary stimulating effect was noted after the exhibition of even very small doses of cocain or local anesthetics. Of the decomposition products of cocain, ecgonin was found to be a powerful depressant, while benzoyal ecognin was only very slightly depressant in its action, and sodium benzoate and methyl alcohol produced practically no effect. The stimulating effect of cocain on muscular work, therefore, cannot be due to its peripheral action on the muscles themselves, but must be ascribed to a central action.

Action of Viburnum Prunifolium.—None of the preparations of viburnum prunifolium, which Hager and Becht tested markedly affected uterine movements, in either a positive or negative direction. Therefore, they believe that the assertion is borne out by their experiments that as compared with pilocarpin and pituitary extract preparations of viburnum prunifolium must be considered an indifferent drug with no specific action on the uterus. They are convinced that no uniform pharmacologic effect can be ascribed to the drug, for while a stimulation may seem evident at one time, a similar dose under the same conditions produces an apparent inhibition or no perceptible change whatever. The change in the contractions of the uterus which sometimes occur on the addition of an extract of the viburnum prunifolium bark are so slight that the changes may be explained as having been produced reflexly through manipulation of the animal during injection or by the alcohol which holds the drug in solution.

Kansas Medical Society Journal, Topeka

May, 1919, **19**, No. 5

District Board Work from Doctor's Standpoint. J. T. Axtell, Newton.—p. 103.
Work of Red Cross Organizations in Relation to Preventive Medicine of Future. A. Newsholme, England.—p. 107.

Medical Record, New York

May 24, 1919, **95**, No. 21

Case of Osteitis Deformans. A. W. Ferris, Watkins, N. Y.—p. 853.
Training for Lay Workers in Functional Restoration. E. A. Bott, Toronto.—p. 856.

Medical and Legal Aspects of Automobile Plague in Washington. R. W. Shufeldt, Washington.—p. 858.
Rehabilitation of Disabled Soldier. J. C. Faries, New York.—p. 861.
Salient Duties of Nurse. S. E. Earp, Indianapolis.—p. 862.
War Activities of U. S. Public Health Service. B. S. Warren and C. F. Bolduan, Washington.—p. 863.

New York Medical Journal

May 24, 1919, **109**, No. 21

Training of Personnel of An Evacuation Hospital for Service at the Front. E. Eliot, Jr., New York.—p. 881.
*Experiments Conducted to Produce Human Tuberculosis in Fish (Carassius Auratus). R. C. Rosenberger, Philadelphia.—p. 886.
Perforated Zinc Inhaler in Treatment of Respiratory Affections. B. Robinson, New York.—p. 887.
Danger of Pestilence in Europe and Need of an International Health Commission. G. A. Soper, New York.—p. 888.
Memory As An Aid to Vision. W. H. Bates, New York.—p. 890.
*Epidemic Central or Basilar Encephalitis. B. Sachs, New York.—p. 894.
Bone Transplantation; Ideal Method for Correction of Saddle Back Nose. W. W. Carter, New York.—p. 899.
Relation of Urinary Acidity to Specific Gravity. A. L. Benedict, Buffalo.—p. 902.
Experience of a Urologist with Fighting Forces in France. E. Beer, New York.—p. 903.
Administration of Urological Department, A. E. F. E. L. Keyes, Jr., New York.—p. 904.

Experiments to Produce Human Tuberculosis in Fish.—For a period of over three years, Rosenberger conducted experiments trying to determine if tuberculosis could be produced in fish with the human tubercle bacillus by raising the temperature of the water to or near the body temperature of man. In certain parts of the world the eating of raw fish is quite common, and it occurred to Rosenberger that this might be one of the means of the dissemination of the disease. During the entire period of experimentation in all of the spreads studied both from the sediment of the water and the feces of the fish, tubercle bacilli were always demonstrable, although in gradually decreasing numbers. It would seem that the time (three years), mostly at ordinary room temperature, and for several months from 30 to 33 C., was sufficient for infection to have taken place in these fish, and in not one fish was the least suggestion of a tubercle found, except a seemingly increased number of small round cells in the submucosa of the intestinal canal. Rosenberger made histologic studies of a number of control fish of the same variety as those experimented on, and in all of them great numbers of small round cells were observed in the submucosa of the intestines.

Epidemic Central or Basilar Encephalitis.—Of fourteen cases of this disease seen by Sachs, five proved fatal. All of these were bulbar cases. Some patients with bulbar symptoms are on the way to recovery. The cases are cited in detail.

Oklahoma State Medical Assn. Journal, Muskogee

April, 1919, **12**, No. 4

Infant Mortality. R. M. Anderson, Shawnee.—p. 87.
Manifestations of Syphilis in Pregnancy and New Born. W. W. Wells, Oklahoma City.—p. 93.
Practical Thoughts on Care of Pregnant Woman. M. Bledsoe, Chickasha.—p. 95.
Acute Fractures of Skull. A. R. Wiley, Tulsa.—p. 97.

Pennsylvania Medical Journal, Athens

February, 1919, **22**, No. 5

The "Chronic" Tonsil. N. S. Weinberger, Sayre.—p. 261.
Tonsillectomy under Local Anesthesia. G. B. Jobson, Franklin.—p. 266.
Bone Regeneration Following Osteomyelitis. S. L. McCurdy, Pittsburgh.—p. 270.
Follow-Up System of Pennsylvania Department of Health for Former Tuberculous Patients. K. Schaffle, Camp Hill.—p. 276.
Full-Time Staff in Organization of Small Hospital. H. L. Foss, Danville.—p. 285.
Essential Hypertension. H. O. Mosenthal, New York City.—p. 287.
Some Drug Eruptions. M. B. Hartzell, Philadelphia.—p. 292.
Blood Pressure as Prognostic Factor. R. M. Goepp, Philadelphia.—p. 295.
Prognosis of Cases of Intestinal Perforation in Typhoid Without Operation. C. W. Eisenhower, York.—p. 301.
Thoracic Surgery. G. P. Muller, Philadelphia.—p. 304.
Treatment of Malignant Disease by Combined Methods. (Surgery and Roentgen Rays). G. E. Pfahler, Philadelphia.—p. 307.
Investigation of Alleged Epidemic of "Psittacosis" in Wilkes-Barre, Pa., March, 1917. T. W. Jackson, H. L. Hull and J. B. Rucker, Harrisburg.—p. 312

May, 1919, **22**, No. 8

Responsibility of State Toward Problem of Physical Reconstruction and Industrial Rehabilitation of War and Industrial Cripples.—H. A. Mackey, Harrisburg.—p. 473.
Responsibility of Industries Toward Problem of Physical Reconstruction and Industrial Rehabilitation of War and Industrial Cripples. C. B. Auel, East Pittsburgh.—p. 477.
Mechanical Aids to Reconstruction. R. T. McKenzie, Philadelphia.—p. 483.
Prevention of Industrial Diseases and Reclamation of Diseased. A. Stengel, Philadelphia.—p. 485.
Industrial Injuries in New Jersey. L. T. Bryant, Trenton.—p. 489.
Work of Federal Board for Vocational Education. H. L. Brunson, Wishington, D. C.—p. 490.
Reclamation of Disabled. H. E. Mock, Washington, D. C.—p. 492.
Returning Disabled to Economic Independence. D. C. McMurtrie, New York.—p. 495.
*Recent Results of Coordination of Laboratory and Clinical Researches in Pneumonia. S. S. Cohen, Philadelphia.—p. 506.

Recent Results of Coordination of Laboratory and Clinical Researches in Pneumonia.—This paper is a review of other papers published since 1917 by this author and others which were abstracted in THE JOURNAL.

Public Health Journal, Toronto

May, 1919, **10**, No. 5

Medical and Social Aspects of Venereal Disease Problem. G. Bates.—p. 193.
Tuberculosis Findings in City Survey. D. B. Armstrong, Framingham, Mass.—p. 205.

Virginia Medical Monthly, Richmond

May, 1919, **46**, No. 2

*Congenital Pyloric Stenosic Comparison of Operative Procedures. W. L. Peple, Richmond.—p. 25.
Present Status of Cesarean Section. B. H. Gray, Richmond.—p. 29.
Immediate Perineal Repair. V. Harrison, Richmond.—p. 33.
Diet During Puerperium. M. P. Rucker, Richmond.—p. 35
Case of Gangrenous Balanitis. C. F. Ross, Richmond.—p. 36.
Treatment of Fractures of Elbow. P. W. Boyd, Jr., Winchester.—p. 37.
Causes of Insanity. J. T. A. Wright, Woodville, Pa., and G. A. McCracken, Pittsburgh.—p. 39.
Cooperative Medicine. H. H. Roberts, White Sulphur Springs, W. Va.—p. 40.
Treatment of Non-Malignant Laryngeal Vegetations by Roentgen Rays. A. I. Gray, Richmond.—p. 41.

Congenital Pyloric Stenosis.—Peple has devised a special table for operating on babies. It is made of wood and is twenty-eight inches long, ten inches wide, and eight inches high. It contains a drawer which can be filled with hot water bags to supply and maintain heat without any danger of burning. It has a headpiece that drops back at any desired angle, and a screen to keep the anesthetist well out of the way. It is fastened, by bandages passing through its lower rim, to any operating-table, making it perfectly steady and allowing it to follow the big table in Trendelenburg or any other desired position. Slots and holes are cut in its upper surface, so that the hands and thighs may be securely fastened. These also allow the heat from below to come up under the covers to maintain an even temperature. The height of the table raises the surface of the abdomen about as high as the adult's would be. Special little blankets are used to wrap the chest and legs, and little covers and sheets are made to suit the baby; with a special set of little instruments, needles and sutures, everything is brought into proper proportion.

West Virginia Medical Journal, Huntington

March, 1919, **13**, No. 9

Treatment of Infected Gall-Bladder and Bile Duct. C. R. Ogden, Clarksburg.—p. 321.
Intestinal Tumors. R. J. Reed, Wheeling.—p. 324.
Pellagra; Report of Cases. H. G. Steele, Bluefield.—p. 329.
Pellagra. E. F. Moore, Davis.—p 334
Puerperal Gangrene of Both Legs, Extending to Knees; Double Amputation; Recovery C. F. Hicks, Welch.—p. 337.

May, 1919, **13**, No. 11

Operative Treatment of Fractures. C. F. Hicks, Welch.—p. 401.
Baneful Influence of Uterine Retrodisplacements on Procreative Function of Ovaries. R. J. Reed, Wheeling.—p. 405.
Typhoid Epidemic in Coal Fields V. L. Wetherby, Wilcoe.—p. 408.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Indian Medical Gazette, Calcutta

April, 1919, **54**, No. 4

Exercises on Ground Without Troops and Uses to Senior Medical Officers. P. Hehir.—p. 121.
Search for Schistosomiasis in India. F. Milton.—p. 126.
*Treatment of Lepers with Gynecardate of Soda "A." E. Muir.—p. 130.
*Bacteriology of "Spanish Influenza." C. A. Woutersz.—p. 134.
*Simple Operation for Piles. T. H. Foulkes.—p. 137.
Results of Microscopic Examination of Stools of Five Hundred East African Natives Not Suffering from Intestinal Diseases. T. A. Hughes.—p. 139.
*Unusual Case of Hydrophobia. J. W. Cornwall.—p. 140.

Treatment of Lepers with Gynecardate of Soda "A".—Muir reports on the condition of thirty patients whose cases were recorded previously and cites twenty-three new cases in which he used gynecardate of soda "A". As sodium gynecardate "A" led to destruction of the veins in several cases it was found necessary to give sodium morrhuate intramuscularly. There was not such rapid progress made in the clearing up of anesthetic patches with the morrhuate, but the nodular patches made equally rapid progress. In some cases, over-dosage led to a very marked febrile reaction, accompanied by the formation of pustules and, later, of sores on the limbs and a recrudescence of anesthesia. This sudden return of anesthesia was in cases that had made specially rapid progress before. The rapid progress made at first in several cases was followed later by slower, but still steady, progress towards recovery. Early cases healed up rapidly, especially in children with intravenous injections of sodium gynecardate "A" solution. Sodium morrhuate is not nearly so destructive to the veins. To get the maximum of effect Muir recommends the following system of dosage: First week.—Sodium gynecardate "A" .5 c.c. intravenously, first day; sodium gynecardate "A" .25 c.c. plus sodium morrhuate .25 c.c. intravenously, third day; sodium morrhuate .5 c.c. intramuscularly, fifth day. Second week.—Sodium gynecardate "A" 1 c.c. intravenously, first day; sodium gynecardate "A" .5 c.c. plus sodium morrhuate .5 c.c. intravenously, third day; sodium morrhuate 1 c.c. intramuscularly, fifth day. In this way the dosage should be increased by .5 c.c. week by week up to 5 c.c., provided there be no marked febrile reaction or other danger signal. Where there is a marked febrile reaction the dose should be halved and again gradually raised, but kept at least 1 c.c. below the dose that produced the marked reaction. The injections should be continued for some months after symptoms have entirely disappeared.

Bacteriology of "Spanish Influenza."—In fifteen typical cases of epidemic influenza examined by Woutersz an organism was discovered which has not been described as yet. Of the fifteen patients seven recovered in from four to eight days; the remaining eight patients developed pneumonia very early in the illness and died in from three to five days. Of the seven patients who recovered, the sputa of six were examined at the height of the illness; in the seventh case the sputum was not examined till the eleventh day after recovery. In all these cases the sputum was found to be teeming with moderate sized, plague-like bacilli. After a month's convalescence the organisms were not found in the sputum. Similar organisms to those found in the sputum were present in the heart-blood, spleen, lungs, and kidneys of the fatal cases. Smears stained with dilute (1 in 10) carbolfuchsin showed a large number of bacilli not unlike *B. pestis*, but perhaps a little more regular in shape and more pointed. Pfeiffer's *B. influenzae* could not be identified in the smears from sputum or the post-mortem material. Cultures made on serum agar, blood agar, and haemoglobin (Deschien's) agar failed to give a growth of Pfeiffer's bacillus. On the other hand, the plague-like organism was always present in cultures. The organism is a rather short bacillus with a tendency to polar staining; a very noticeable character is its pleomorphism, especially when grown in liquid media, although direct preparations from the tissues also show it. Cultures on agar-agar show short, coccoid forms, and at times the organism looks very like a diplococcus. Longer forms are met with in broth cultures. Diplobacilli are very common. Smears from heart-blood show a well-defined capsule, but it is not as a rule met with in smears from the spleen and other organs. The capsule tends to disappear on cultivation in solid media, though milk cultures almost always show it. No flagella or spores were demonstrated. True motility was not observed. The organism is gram-negative, and stains very readily with all the usual laboratory stains. It is acid-fast. The organism grows aerobically but it is also a facultative anaerobe. The organism isolated freshly from the human body is highly pathogenic for rabbits, guinea-pigs, and rats. Grown for several generations on artificial media, however, it rapidly loses its virulence.

Operation for Piles.—The operation described by Foulkes is really that called "Robert Jones's," by Burghard, varied by the use of a modification of the interlocking ligature previously described by the author in 1912.

Unusual Case of Hydrophobia.—A male, aged 25, was bitten on the right thigh, three punctures, about October 5, 1918, by his own dog, which had been bitten by a stray dog about a month before. A cow, an ass, a dog, and the man's wife were bitten the same day as he was bitten. Of these, the dog was killed within a few days, the wife died from hyprophobia about a month and a half after having been bitten, and the cow and the ass died a few days later. The patient's wounds healed. He continued his occupation until the morning of February 4, 1919, about four months after his bite, when he felt a difficulty in swallowing and in breathing. He died on the twelfth, nearly nine days later, which Cornwall points out is an unusually long time for the disease to last.

Japan Medical World, Tokyo

April 27, 1919

Toxin Produced by Influenza Bacillus. S. Yabe. To be continued.

Journal of Laryngology, Rhinology, and Otology, London

May, 1919, **34**, No. 5

Intrinsic Cancer of Larynx; Operation by Laryngofissure and Results. S. C. Thomson.—p. 145.
Laryngeal Changes Induced by Mustard Gas. A. Ryland.—p. 153.

Journal of Tropical Medicine and Hygiene, London

April 15, 1919, **22**, No. 8

*Amebic Abscess of Brain: Following Amebic Abscess of Liver. F. L. Armitage.—p. 69.

Amebic Abscess of Brain Following Amebic Abscess of Liver.—Dysenteric abscess of the brain supervene, as a general rule during or following a liver abscess, and the condition is found most commonly in those regions where amebic dysentery is endemic. Forty-eight cases are recorded to date. The amebas are carried from the liver by the circulation via the circle of Willis to the brain, where successive lesions are evolved in the cerebral tissue. The case seen by Armitage is one recorded by Stout and Fenwick. The patient, aged 35, was admitted to the hospital, with a diagnosis of "gallstones," and a history of frequent rigors, jaundice, pain in the region of the gallbladder and evening rise of temperature to 103 F. There a diagnosis of hepatic abscess was made. The patient was operated on, and an abscess evacuated. The liver abscess pus showed many actively motile *Endamebae histolyticae*. About six weeks afterward mental symptoms were noted, such as drowsiness and listlessness. There was no pain, and on the whole he slept fairly well, but was frequently disturbed by a troublesome cough. The pulse varied from day to day, being fairly good at times, at others becoming very weak, and he was put on strychnin and pituitary extract. The urine and feces continued to be passed involuntarily, and remained so throughout the rest of his illness. His mental condition improved somewhat, he spoke rationally, and was usually cheerful and bright. A troublesome hiccup developed during the last three days of his illness, and on the day prior to his death he com-

plained of occasional headache, which apparently, however, was not severe. The temperature during the last fortnight was usually about 101 F., the highest being 102 F. There were no rigors and no ocular or localizing symptoms indicating brain abscess. The patient died fifteen days after the onset of cerebral symptoms. At the necropsy an abscess of size of pigeon's egg was found in the lower inner portion of the right frontal lobe extending into right ventricle, and containing thin yellow pus. There was an area of softening in the brain around and localized basal meningitis in that area. Motile endamebas were found in the softened tissue surrounding the pus proper.

Archives Médicales Belges, Liége

January, 1919, **73**, No. 1

Influenza in the Belgian Army. Nolf, Spehl, Colard and Firket.—p. 1.
*Lethargic Encephalitis. H. Burger and R. Focquet.—p. 19.
*The Argyll Robertson Sign in Prognosis. E. Rasquin and B. Dujardin. —p. 26.
War Mental Disturbances. A. Leroy.—p. 40.

Lethargic Encephalitis.—Burger and Focquęt declare that to date the clinical picture known as lethargic encephalitis is confused, the causal agent unknown, and the pathologic anatomic basis not well defined. It was first described in Paris and England in March, 1918, but epidemics had been recorded at Tübingen in 1712, in Italy in 1890, and at Vienna in 1917. The death rate is about 33 per cent. They describe a case in the maréchal des logis, who was found unconscious on the street, apparently in the deep slumber of drunkenness. He slept calmly the next day till he roused and complained of severe headache in the right temple, and ptosis of the right eyelid and divergent strabismus were also noted. He soon dropped to sleep again. Jacksonian epilepsy developed in the course of the disease, which proved fatal the thirteenth day. Lumbar puncture showed a hemorrhagic process but no bacteria could be cultivated from the fluid.

The Argyll Robertson Sign.—Rasquin and Dujardin assert that the discovery of the Argyll Robertson sign calls at once for making out the balance sheet as regards syphilis. It may be the only sign of the disease and the patient may not be aware that he has it and may feel perfectly well. Nevertheless he must be told of the danger in which he stands, and the urgent necessity for treatment must be impressed on him as the only chance for him to escape some severe nervous affection, general paralysis, for example. The balance sheet can be drawn with great precision nowadays by the data obtained from examination of the blood, spinal fluid and the reaction to luetin. We can thus form a kind of biologic formula which can be compared with the typical formulas of the principal syphilitic nervous affections, and thus foretells the outcome. If the Bordet-Wassermann test of the blood is negative, reactivation must be tried. If this is negative, then lumbar puncture must be done, and only when all of these give a negative response are we justified in keeping the patient merely under surveillance. When the findings in the spinal fluid are seen to be exactly like those with grave nervous affections, the patient becomes convinced of the desirability of treatment. These old forms of syphilis are often very slow in responding to treatment, even quite active. As the reactions return to normal under treatment, the patient will understand better and will submit more docilely to our therapeutic efforts. By comparing the biologic formulas from time to time we can supervise conditions as they improve and further convince the patient of the wisdom of thorough treatment.

Bulletin de l'Académie de Médecine, Paris

March 25, 1919, **81**, No. 12

Possibility of Protozoan Origin of Cancer. A. Lumière.—p. 326.
Cancer at Havre. A. Loir and Legangneux.—p. 357.
Vaccination Against Smallpox in French Army. Fasquelle.—p. 359.
See Paris Letter, p. 1384.

Journal de Chirurgie, Paris

April, 1919, **15**, No. 2

Wounds of Large Vessels at Base of Neck. L. Sencert.—p. 101.
*Surgical Complications of Typhus. P. Moure and E. Sorrel.—p. 136.

Surgical Complications of Typhus.—Moure and Sorrel were at the French hospital at Jassy during the 1917 epidemic of typhus and of relapsing fever in Roumania. They were impressed by the frequency, after typhus, of nose, mouth and throat complications, of parotitis, of laryngeal and ocular complication, erysipelas and gangrene. In two soldiers, acute delirium with attempt at suicide, was almost the first symptom of the disease. The streptococcus was generally responsible for the complications which were usually subacute. The prognosis is generally grave as the patients are at such a low ebb of vitality. Prophylaxis must aim to ward off secondary infection, and general strengthening treatment is more important than local measures.

Journal de Médecine de Bordeaux

April 25, 1919, **90**, No. 8

*Indemnization for Hysteric Accidents. R. Cruchet.—p. 147.
*Oxygen for Burns from Gassing. E. Rousseau and L. Devaux.—p. 149.

Pension for Hysteric Disability.—Cruchet recalls that in 1916 the Société de Neurologie voted that phenomena of hysteria, pure pithiatism, do not entitle a soldier to a special disability pension. This dictum was voted notwithstanding Pitres' objections, but time has confirmed these objections, and the society has had to capitulate. March 20, 1919, the society went on record as advocating discharge from the army and a special disability indemnity for this class of cases. The hysteric are diseased, and the examiner has only to determine the amount of real disability resulting. Pitres related that in the 503 cases at Bordeaux there was not a single instance of hospital contagion. He insisted that these cases should be regarded from the same standpoint as industrial accidents. The indemnity finally voted by the society was a sliding scale from zero to 20 per cent.

Treatment of Mustard Gas Burns.—Rousseau and Devaux had a lot of raw meat that had been exposed to mustard gas sent to their laboratory, and their tests on this material showed that nascent oxygen annulled the irritating properties of mustard gas, the "yperitis." Copious application of hydrogen dioxid proved effectual in treatment of gassed soldiers, suppressing the intense pain constantly and completely in less than ten hours, the pain subsiding by half in less than an hour, and the edema disappearing in less than six days and showing marked improvement in a few hours. Fats hold the mustard gas and form a barrier to the action of the nascent oxygen, hence salves should not be used.

Lyon Médical

April, 1919, **128**, No. 4

*Tuberculosis of Tracheobronchial Glands. A. Dumas.—p. 180.
*Nervous Complications of Influenza. C. Maurice.—p. 187.

Fulminating Tuberculosis of Tracheobronchial Glands.—Dumas describes five typical cases of this unusual form of tuberculosis as he observed it in five African soldiers at Salonica. The men entered the hospital with the diagnosis of bronchitis and died in two or three months, necropsy showing tuberculous involvement of the mediastinal lymphatic system with secondary invasion of pleura and pericardium. Some of the glands broke down into a purulent focus while the lungs escaped almost entirely. The cases all proved rapidly fatal, none lasting for over three months. "Radioscopy differentiates the disease but the temperature determines the prognosis." The clinical picture is more like those observed in children than in adults, but even in children such a fulminating form is almost unknown, while it seems to be the rule in the blacks of the French colonies in Africa.

Nervous Complications of Influenza.—Maurice reviews the indications for treatment during convalescence for influenza, saying that this disease strikes electively the great sympathetic and the glands with an internal secretion which stimulate this nerve, that is, the thyroid and suprarenals. The nervous complications of influenza are thus traceable to the sympathetic nerve, as he explains in detail. Arsenic and strychnin combat this, but quinin is not indicated, as this, he says, is a *réducteur thyroïdien*. Calcium chlorid, about 2 gm. daily, will have a favorable action when the arsenic and strychnin have produced their tonic effect on

nutrition and circulation. The calcium chlorid should be kept up for several weeks, combining epinephrin with it, about fifteen drops a day. Alcohol and the juice of raw meat should be avoided at first, while the thyrosympathetic asthenia is marked. Starchy foods, purées and cooked fruits reenforce the strychnin-arsenic medication with a tonic and remineralizing action. But later, wines and raw meats will aid in improving the state of the blood and the secretory activity of the glands. Phosphorus, eggs and milk he denounces as reducing thyroid functioning and the blood pressure. They will increase the *embarras gastrique*, he says, and benefit only in cases of a tendency to melancholia when there is a constitutionally high pressure. A change to the country, out of door life and peace of mind are the sovereign remedies for vegetative asthenia, and they should be imperatively ordered if other measures fail.

Paris Médical

April 26, 1919, **9**, No. 17

The Teaching of Hydrology. G. Linossier.—p. 325.
*Treatment of Acute and Chronic Anaphylactic Disturbances. J. Danysz.—p. 329.
*Cancer of Rectum. R. Savignac.—p. 334.

Anaphylactic Skin, Gastro-Intestinal and Nervous Disturbances.—Danysz remarks that bacteriologists and clinicians are still at variance as to whether immunity and anaphylaxis are the result of reactions of a different or similar nature. He here reports some recent experiments and clinical experiences which throw more light on the nature and consequences of these reactions, and their bearing on certain digestive, cutaneous and nervous disturbances. The difference between the reaction to repeated injection of a toxin (anaphylaxis), and the reaction to repeated injection of any other antigen (immunity), is due he explains, to whether the mixture of toxin and antitoxin forms a precipitate or persists clear. If there is a precipitate and if the antigen was a virulent microbe, the reaction will be manifested both by immunity and by anaphylaxis; by anaphylaxis alone if the antigen is an albuminoid food substance. If no precipitate forms, the reaction will be manifested by antitoxic immunity without any phenomena of anaphylaxis.

He explains further that the production of antibodies in excess of what is needed is liable not only to fatigue the cells, but the continuous production of an excessive amount of antibodies may induce various chronic morbid conditions, digestive or respiratory disturbances, dermatoses, "rheumatism," etc. These various disturbances can be arrested only by checking the excessive production of antibodies which is keeping up a chronic anaphylaxis. This can be accomplished by the same means which abort an attack of acute anaphylaxis, namely, by Besredka's method of a preliminary injection of a minute dose of the antigen which in a larger dose would unleash the anaphylactic crisis. The same result can be realized by ingestion of a strong dose of alcohol or ether (Roux and Besredka); by ingestion of a small amount of peptone (Pagniez and Vallery-Radot); or by injection of a vasoconstricting drug (epinephrin, Milian). These reactions are not specific, but they answer the purpose, and the symptoms of chronic anaphylaxis can be cured by the same mechanism of injection or ingestion of nonspecific antigens.

In practical application of this principle, Danysz has treated 159 patients, including 103 with various gastro-intestinal disturbances, 2 with persisting neurasthenic insomnia, 9 with painful menstruation, 8 with asthma, 15 with psoriasis, 10 with other dermatoses and 12 epileptics. The antigen used in treatment was an emulsion made from the bacteria in the patient's stool or a similar hetero-emulsion. The intestinal flora in the pathologic cases always included bacilli that fermented saccharose and lactose, bacteria liquefying gelatin, and certain varieties of streptococci, diplococci and enterococci, so that Danysz recognized a uniform flora, as it were, and he found that the heteropreparations were usually as efficient as those of autogenous origin. Only in the cases of painful menstruation some patients proved refractory to the hetero-antigen but yielded at once to the auto-antigen. The benefit in epilepsy was always pronounced. One boy of 9 who had been having several seizures a day has had no return of them during the eight months to date. The doses were always small, never over 3 mg. in a beverage; for subcutaneous injection, a few hundredths of a milligram of dried microbe bodies of a constant weight.

He cultivates separately each of the microbes which grow on slanting gelose, and mixes the emulsions in the proportions in which they occur in the stool, sterilizes at 60 C. or boils up two or three times if there are spores. In the majority of cases the benefit was manifest from the very first, the patient saying, "I felt something like a chill all over, and then I felt very much better at once."

Palpation of the Rectum.—Savignac in extra large type urges to make a digital examination of the rectum in every case of hemorrhoids, even suspected, of pain in rectum or anus, and of diarrhea or constipation. This is the only and almost the infallible means to reveal cancer of the rectum, and possibly in its incipiency.

Presse Médicale, Paris

April 24, 1919, **27**, No. 23

*Bone Grafts to Repair Gaps in Bones. P. Mauclaire.—p. 213.
*Leukocytosis in Infections. G. Audain.—p. 216.
Experimental Research on Hemorrhage. L. Binet.—p. 217.

Bone Grafts.—Mauclaire warns that a bone grafting operation should not be attempted until at least six months after the healing of a suppurating lesion. He found a small latent focus of osteitis in one case four months after apparently complete healing. The various technics that have been applied are reviewed and compared, and the results. In 128 cases of segmental grafts, complete success was realized in seventy-two. In his own twenty-four cases he has had eight successes, and explains that extraneous circumstances were responsible for some of the failures. If the graft is well nourished, it usually increases in size and the functional result is perfect. He prefers to introduce loosely the pointed ends of the graft into the marrow cavity of the long bone.

Leukocytosis in Infections.—Audain explains that when the infection is in an organ or tissue abounding in lymphoid elements, the mononuclear white cells are the pivot of the defense. With an organ or tissue poor in lymphoid elements (like the cellular tissue, lung or blood), the polynuclear is captain of the defensive forces. The difference between the number of polynuclears or mononuclears and the normal figure is an index of the conditions which determine the prognosis. Thousands of examinations of blood specimens have confirmed the reliability of this *résultante*, as Audain calls it. For example, assuming as normal figures, 4,900 polynuclear and 2,100 mononuclears (that is, in 7,000 leukocytes, 70 per cent. are polynuclears and 30 per cent. mononuclears), if the blood with 12,000 leukocytes shows 78 per cent. polynuclears to 22 per cent. mononuclears, then the polynuclear *résultante* would be $(780 \times 12) - 4{,}900 = 4{,}460$. The mononuclear *résultante* would be $(220 \times 12) - 2{,}100 = 540$. With infection in organs scant in lymphoid elements, the prognosis is good with a *résultante* of 3,000 to 8,000, and very good from 10,000 to 16,000 and above. With infection in an organ or tissue rich in lymphoid elements (as in enteritis, typhoid, paratyphoid and tonsillitis), the prognosis is favorable if the *résultante* is above zero. Below minus 600 it is grave, and very grave at minus 2,000 or below.

Audain insists further that the minimal temperature is what counts. The minimal temperature varies in inverse proportion to the *résultante* index. His studies of the behavior of the leukocytes in connection with the course of the infection have convinced him that treatment of infection should be focussed on means to increase the forces of the defensive leukocytes involved. Leukogenous medication should be our aim, and for this, sodium nucleinate, isotonic sugar solution, and turpentine are the main reliances.

Progrès Médical, Paris

Jan. 6, 1919, **34**, No. 1

Extraction of Projectile in Lung. R. Didier.—p. 1; A. Chalier.—p. 3.
Individualized Prophylaxis of Infections in General. Bernheim.—p. 4.
Treatment of Influenza. M. Icard.—p. 4.

Jan. 11, 1919, **34**, No. 2

*Deficiency Disturbances in Soldiers. L. Bruntz and Spillmann.—p. 9.
Film Treatment of Wounds. A. Combault.—p. 13.

Deficiency Disturbances from Army Ration.—Bruntz and Spillmann relate that they were impressed with the resemblance between the symptoms of trench foot and the symptoms presented by animals whose food does not contain vitamins. Their research has apparently confirmed that the cold and wet are merely secondary factors. The more they studied the experimental avitaminoses, the firmer became their conviction that many of the pathologic conditions noted in the soldiers at the front were the direct result of deficiencies in the diet. The neuritic disturbances of "trench foot" precede the trophic disturbances, accompany and follow them, and their distribution is the same as in pigeons on deficiency diets, and in beriberi. The neuritis with "trench foot" entails paresthesias, pains (as in the rabbit), motor disturbance (as in the pigeon), and circulatory disturbance with edema (as in the pigeon), with eschars. This insidious neuritis is thus enough alone to explain all the lesions of trench foot and the opportunity for secondary infection of all kinds, favored by cold and wet. They are inclined to ascribe to the deficient diet certain other disturbances, pains in the legs, asthenia, indigestion, certain psychoneuroses, insomnia, etc.

Jan. 18, 1919, **34**, No. 3

*Organic Basis of Neurasthenia. Bernheim.—p. 19.
*Transitory Lapse of the Will Power. P. Voivenel and R. Mallet.—p. 19.
Digitalis Preparations. A. Remond and Minvielle.—p. 20.

Neurasthenia.—Bernheim remarks that he has been much disappointed to find that neurasthenia resists treatment by suggestion, which is so successful with simple irritable nervous weakness. In 50 per cent. of his cases of neurasthenia, he found the knee and foot reflexes exaggerated, and he accepts this as a sign of an actual organic lesion. Neurasthenia has been rarely encountered in soldiers; it does not have an emotive origin, but it may follow typhoid, influenza, or certain other infectious diseases. The neurasthenia may assume the form of neuropsychasthenia with a tendency to melancholia, or the gastro-intestinal form, or there may be mild spinal symptoms. In his experience, neurasthenia lasts at least six months, and it may return periodically for some months or years, or may flare up anew after an acute infectious disease. It seems plausible to assume that neurasthenia is the result of toxemia from some upset in the nutritional biochemistry or in the endocrine system.

Lapsing of the Will Power.—Voivenel and Mallet refer to instances in which soldiers who had been cited for special bravery deserted their post in the presence of the enemy. The psychopathic basis was easily determined, and the occurrence thus explained as a transient *fugue*, that is, a transitory frenzy, like epileptic automatism.

Revue Médicale de la Suisse Romande, Geneva

February, 1919, **39**, No. 2

*The Floating Testicle and its Misdeeds. R. Koenig.—p. 57.
*Formation of Precipitin after Injection of Serum. Nakata.—p. 64.
Defensive Reactions in Epidemic Influenza. F. Wanner.—p. 71.
Appendicitis of Influenzal Origin. Veyrassat.—p. 78.

The Floating Testicle.—Koenig reports a case in which the undescended left testicle repeatedly worked down into the inguinal canal and became incarcerated there under the skin, causing pain until it finally slipped back or could be pushed back into the abdomen. The incarcerated testicle finally became accompanied by symptoms of internal incarceration of the bowel, persisting after the testicle had spontaneously slipped back into the abdomen. The operation revealed a cord attached at both ends to the mesentery, an actual ligament, attached in the center to the testicle, and progressively obliterating the lumen of the small intestine. Koenig adds that after 30 the floating testicle may be regarded as certainly atrophied, and we need not hesitate to remove it or push it back into the abdomen and close the outlet.

Development of Precipitin After Injection of Serum.—Nakata reports research undertaken to decide how long it takes for precipitin to develop after injection of a heterogenous serum. He found that it takes from five to eleven days for the precipitin to form after a single injection of the antigen. It reaches its maximum between the ninth and fifteenth days, and persists till its final disappearance from the thirty-third to the seventieth day. The precipitin reaction is stronger and more lasting with beef serum, and least with goat serum. The amount of the antigen injected, above a minimum of 5 c.c., does not seem to influence the character of the precipitin reaction, but it is most intense by intravenous or intraperitoneal injection. In rabbits, the intravenous injection is the best. In guinea-pigs he was unable to obtain a precipitin reaction with a single injection of the antigen.

Revue Mens. de Gynécologie, d'Obst. et de Péd., Paris

March, 1919, **14**, No. 3

*Melena in Newborn Infants. P. Balard.—p. 85.
*Extramembranous Pregnancy. C. Gonnet.—p. 91.
*Pituitary Preparations in Obstetrics and Gynecology. L. Pouliot.—p. 93. Conclusion.

Gastro-Intestinal Hemorrhage in the Newly Born.—Balard reports two cases in which, the second day after birth, there was melena, accompanied in one case by hematemesis. There was no excoriation of the mouth or of the breasts to which the hemorrhage could be traced, and the blood could not have been swallowed during the birth process as the blood was a fresh red. The tendency to hemorrhage kept up for twenty-four hours and then yielded to hypodermic injection of gelatinized serum (20 c.c.) plus 10 c.c. of serum from a horse that had been repeatedly bled. The blood of the newly born has not become accustomed to the new conditions of circulation, and mechanical factors readily explain the tendency to hemorrhage at this time. The arterial tension was rather low after the hemorrhage had begun, but it ran up above normal after arrest of the hemorrhages. This suggests that it may have been above normal to start with, but the hemorrhages had brought it down so low that infusion of these comparatively large amounts of fluids did no harm and only good.

Extramembranous Pregnancy.—The profuse watery, pinkish uterine discharge at the eighth month, with living fetus, was explained by finding that the fetus had escaped through a tear in the membranes and had developed outside of them. The fetus weighed 1,450 gm. and showed no signs of deformity, but died three hours after birth. Gonnet knows of only forty cases of extramembranous pregnancy on record. Breech presentation is the rule in these cases, and the placenta is usually of the marginata type.

Pituitary in Obstetrics and Gynecology.—This long review of recent literature on pituitary extracts is accompanied with ten pages of bibliographic references, but Pouliot remarks in conclusion, "The reader desirous to become completely posted on the subject will read with interest Mundell's article 'The Present Status of Pituitary Extract in Labor' in The Journal of the American Medical Association **68**:1601, 1917. He will find there, besides a good bibliography, numerous statistics and critical analysis of certain unfavorable cases. Nothing in Mundell's work, however, conflicts with my conclusions or materially modifies them." Pouliot suggests that a pituitary extract might be added to the fluid for proctoclysis or to saline for infusion, with or without epinephrin. It might prove useful in this way in obstetrical or major gynecologic operations, to ward off or treat operative shock. It seems to act in such cases like epinephrin, only more mildly and the effect is more durable. He discusses the indications and technic in obstetric and gynecologic cases, especially its value in overcoming retention of urine in parturients and in starting up peristalsis, aside from its action on the genital organs.

Correspondenz-Blatt für Schweizer Aerzte, Basel

April 12, 1919, **49**, No. 15

*Changes in the Air Passages in Influenza. M. Askanazy.—p. 465.
*Croup with Influenza. Coray.—p. 474.
Errors in Determination of Volume of Blood Platelets. J. Aebly.—p. 478.
*Sugar Treatment of Pulmonary Tuberculosis. P. von Schulthess-Rechberg.—p. 489.

Changes in Large Air Passages with Influenza.—Askanazy says that the necropsy findings in the 320 influenza cadavers he examined were monotonously uniform. He was impressed particularly by the changes in the epithelium of the larger air passages, actual metaplasia, as he describes in detail.

Croup with Influenza.—Coray relates that during the severe wave of influenza at Zurich many children developed a croupous form with laryngeal stenosis, requiring an emergency operation in half of the eighteen cases in this group. There were five deaths in the group of six cases with influenza croup plus pneumonia, and two deaths in the two cases of influenza with true diphtheric croup. The ten children with pure influenza croup all recovered, only one requiring intubation and one intubation plus tracheotomy. The cases in this group were all grave and probably would have terminated fatally if the children had not had the resources of hospital treatment. The resemblance to true diphtheria is so deceptive that diphtheria antitoxin should be given in such cases as a routine measure although it has no influence, probably, on the influenza. Intubation should be reserved for vital indications in influenza, as even at the best it is irritating and may lead to pneumonia. He has been unable to find any mention of croup with influenza in the records of the 1890-1891 epidemic.

Sugar Treatment of Tuberculosis.—Nine patients with profuse expectoration and stationary physical findings were given Lo Monaco's saccharose treatment. In five-sixths of the cases the amount of sputum was reduced by 20 to 80 per cent. No other effect was apparent. Not every patient can stand the sugar injections, so caution is necessary with this treatment.

Gazzetta degli Ospedali e delle Cliniche, Milan

April 6, 1919, **40**, No. 28

*Plague in Italian Colony in Africa. F. Mazzone.—p. 245.

Plague in Cyrenaica.—Mazzone gives a map and illustrations of a few cases of bubonic plague in an Italian colony in Africa during 1917. The disease was imported, evidently by human beings, and no mortality was observed among the rats. Antiplague vaccination on a large scale arrested the epidemic after it had caused 108 deaths in 173 cases among the 2,350 Arabs not vaccinated, and 26 deaths in 93 cases among the 11,836 Arabs that had been vaccinated. Only 12 among the 7,110 whites vaccinated and none of the 850 not vaccinated contracted the disease, and only one died. The active immunization by the Haffkine method thus does not guarantee against infection, but it materially reduces the morbidity and renders the disease very much milder. For immunizing the members of the family, he prefers the Salimbeni-Calmette technic. He reaffirms in conclusion that bubonic plague has lost its terrors as we are now armed both for prevention and treatment.

April 10, 1919, **40**, No. 29

*Falling of the Hair after Influenza. C. V. Lutati.—p. 260.

Postinfluenzal Alopecia.—Lutati presents evidence that there is nothing specific about the falling of the hair which follows influenza. It requires general tonic measures, iron, arsenic, phosphorus, more than local applications. He warns that the latter must not be irritating.

April 13, 1919, **40**, No. 30

*Phosphate Crystals in Urine. M. Calzolari.—p. 271.

Phosphates in Urine.—Calzolari states that in the stellate form of crystals, the ammonium-magnesium phosphates in the urine give the Millon reaction for proteins. He examined 10 healthy persons, 42 convalescent soldiers, and 63 patients with various diseases, including 15 women, and discusses the differential significance of the forms of crystals found.

Policlinico, Rome

April 13, 1919, **26**, No. 15

Camphorated Oil plus Guaiacol in Treatment of Influenza in Young and Old. C. Bassoni.—p. 449.
Sero-Vaccine Therapy of Influenza. S. Daniele.—p. 452.
Device for Traction on Amputation Stumps. M. Fasano.—p. 464.

April 20, 1919, **26**, No. 16

*Prevention of Peritonitis. R. Mosti.—p. 481.
The Technic for Heliotherapy. A. Pratt.—p. 483.

To Ward Off Peritonitis.—Mosti describes the practical measures he has found in his own experience most effectual in warding off acute diffuse peritonitis after a laparotomy in the course of which the serosa had been contaminated with septic material. He keeps the patient in the semiseated position and gives 4 liters of saline by the drop method of proctoclysis, but places his main reliance on ether with which the contaminated region is disinfected after it has been cleaned out. He has never had peritonitis develop in patients treated with this combination, even when the peritoneum was much soiled with the contents of stomach or bowel or with septic products.

April, 1919, **26**, Medical Section No. 4

*Hemolytic Splenomegaly. A. Ceconi.—p. 129.
*Sarcoid Tumors and Pseudoleukemia. P. L. Bosellini.—p. 147.
Sporotrichosis; Two Cases. C. Vignolo-Lutati.—p. 160.

Hemolytic Jaundice.—Ceconi had two patients long under hospital observation who presented chronic acholuric jaundice with great enlargement of the spleen, and investigation of the two families revealed the familial type of hemolytic jaundice. There were sixty members of the families in the three or four generations studied, and sixteen were examined with laboratory tests. He has also examined (with necropsy in three), five cases of the acquired form. In one of the two families studied the hemolytic jaundice was evident from birth; in the other it did not become manifest till between 20 and 25.

The jaundice is a minor symptom, the main features of the cases being the enlargement of the spleen and the fragility of the blood corpuscles. When jaundice occurs, it is of the acholuric type, with urobilinuria, but no signs of cholemia. The hemolysis is the essential feature, and this has been combatted by removal of the spleen, which seems to be responsible for the excessive production of hemolysins. This pathogenic tendency is congenital and familial. The jaundice may not appear until in adult life, and the hemolytic tendency in childhood may have been overlooked. The bone marrow is possibly a factor in the clinical process; this assumption would explain the cases in which a complete cure was not realized by splenectomy, although in certain rare cases the cure was complete and permanent. In a few cases published as cured, reinvestigation has shown that the corpuscles are still abnormally fragile. The lymph glands are also liable to be congested and enlarged. Ceconi urges as a more accurate name for the clinical picture "hemolytic splenomegaly" instead of hemolytic jaundice, as the jaundice is an inconstant symptom.

Sarcoid Tumors and Pseudoleukemia.—Bosellini reports the case of a boy of 13 who developed a febrile disease in the course of a few months, accompanied by swelling of glands and enlargement of liver and spleen, with hard, elastic, small reddish tumors on trunk and face, and ulcerating papillomatous growths in the mucosa of the mouth. The boy recovered under a few months of arsenical treatment. Bosellini discusses the literature on sarcomatosis of the skin, to which this case seemed to belong, but the recovery under arsenic excludes true aleukemic lymphosarcomatosis. The etiology of this curable *granulosi sarcoidea* is still a mystery.

Riforma Medica, Naples

April 12, 1919, **35**, No. 15

Inaugural of Surgical Course after the War. I. Tansini.—p. 289.
*Remineralization in Hip Joint Disease. D. Maragliano.—p. 292.
Prophylaxis of Influenza. D. E. Silvestri.—p. 294.
Radioscopy in Appendicitis. E. Aievoli.—p. 295.
State Examination for License to Practice. Ferrannini.—p. 303.

Remineralization in Tuberculous Hip Joint Disease.—Maragliano comments on the need for minerals when a tuberculous coxitis is healing. Besides the usual general measures, he supplies material for new bone directly to the process. The distance from the great trochanter to the bottom of the acetabulum is measured under the roentgen rays,

and a corresponding rod of bone and periosteum is cut from the crest of the tibia, about 1 cm. thick. This bar is worked through the neck and head from the trochanter, after a passage has been dug for it, till the end emerges in the acetabulum. The porous condition of the bone renders this easy. It is important to have the periosteum project about 1 cm. beyond the end of the bar of bone. This end is turned down over the bone which prevents the periosteum from being stripped off from the bar as it is worked into place. He has thus operated in four cases, and the results of this slight operation to ensure remineralization of the joint bones have been very favorable.

Anales de la Facultad de Medicina, Lima

January-February, 1919, **2**, No. 7

*Mycosis of the Skin. R. E. Ribeyro.—p. 1.
*Aphorisms of Clinical Urology. M. A. Velasquez.—p. 6.
*Insufficiency of the Kidneys in Influenza. J. Arce.—p. 18.
Psychology in Early History of Peru. H. Valdizan.—p. 25. Cont'n.
*Transmission of Leishmaniosis to Animals. M. N. del Aguila.—p. 42.
*The Specific Agent of Yellow Fever. J. Arce.—p. 53.
Psychanalysis. H. F. Delgado.—p. 62.

Mycotic Dermatosis.—The man's arms, legs and chest showed thirty or forty pustules, the eruption having first appeared two years before, while at his country home, and proving rebellious to all measures. Several similar cases were known on the hacienda. A fungus was cultivated from the lesions, and the patient was sent to a spa for treatment with the waters. The fungus is shown in a colored plate; it is of the hyphomycetes type.

Urologic Aphorisms.—Velasquez dedicates his collection of 127 aphorisms to medical students in general. He says of oliguria that it is a sign of very grave prognosis in cases of intoxication, and warns that the tissues must be supplied with water at once to combat dehydratation, besides favoring elimination of the toxins. Frequent micturition in the obese warns of kidney disease. Frequent micturition, with or without polyuria, is a constant sign of chronic interstitial nephritis, especially in the beginning. Any discrepancy between the color of the urine and its density should suggest pathologic conditions. Every case of chronic disease that shows no improvement and in which no cause for the sickness can be discovered, may be classed as having a tuberculous, syphilitic or diabetic origin. Hyperchlorhydria calls for determination of the sodium chlorid content of the urine. Asthma with nocturnal polyuria suggests nephritis or diabetes; if the pulse is hard, nephritis may be assumed. Incontinence of urine ten or twelve days after childbirth suggests a vesicovaginal fistula. Most of the other aphorisms refer to the findings of different chemical tests.

The Kidneys in Influenza.—Arce reports eight cases of influenzal lobar pneumonia in which there was pronounced azotemia, but it proved transient and the patients recovered. Dalimier reported last year that massive albuminuria in influenza was observed almost exclusively in the fatal cases. Recovery with this finding was absolutely exceptional. In none of Arce's cases was the albuminuria of this massive type.

Transmission of Superficial Leishmaniosis to Animals.—Del Aguila reviews the research in this line by Splendore, Wenyon, Strong and others, and reports the first successful attempt in Peru to inoculate animals with American leishmaniosis, and the first anywhere of successful inoculation of rodents directly from man. His research has demonstrated further that the testicles are best adapted for the inoculation.

Etiology of Yellow Fever.—Arce reviews Noguchi's recent research on the specific agent of yellow fever. He says that before we can accept Noguchi's conclusions, the final proof must be obtained, namely, that pure cultures of the leptospira he has isolated will induce yellow fever in man, and also the determination of the cycle of evolution of the given leptospira in the mosquito until its final reimplantation in its vertebrate host. It would be an immense advantage if the leptospira or other germ should prove the actual specific agent, as this would enable us to detect the abortive and masked cases in adults and children which now perpetuate the scourge.

Annaes Paulistas de Med. e Cirurgía, S. Paulo, Brazil

November, 1918, **9**, No. 11

*Treatment of Tetanus. E. S. Gomes.—p. 241.

Treatment of Tetanus.—Gomes relates that tetanus makes many victims in his part of Brazil. During ten years closing with 1915, there were 10,045 deaths from tetanus recorded throughout the state of S. Paulo. The annual coefficient from tetanus on the general mortality ranges annually from 9.9 to 19 per thousand. During the same decade there were 280 deaths ascribed to tetanus in the city of S. Paulo, 207 of which were in infants under 2. Rio de Janeiro also has a high tetanus death rate, 713 in a recent three year period, that is, about 9.5 per thousand of the total mortality. The proportion at Bahia has ranged from 15.8 to 28.3 per thousand of the total mortality. This high prevalence of tetanus is due in large measure to the fact that shoes are not worn, aside from the high incidence of tetanus from infection of the umbilical cord. In order to decide definitely what reliance can be placed on drugs in treatment of tetanus, Gomes treated large numbers of guinea-pigs with chloral, magnesium sulphate, sodium persulphate or phenol, after inoculation with tetanus. None displayed any efficacy, while antitetanus serum prevented the development of the disease even when injected subcutaneously several hours after the inoculation. Injected intraspinally its effect was most dependable. The intravenous route is preferable to the subcutaneous. In his clinical cases in recent years he has given from 5 to 10 c.c. of the antiserum by all three routes.

Archivos Españoles de Enf. del Ap. Digestivo, Madrid

February, 1919, **2**, No. 2

Physiologic Bases for the Dietary. J. G. Ocaña.—p. 65.
*Endemic Amebic Dysentery in Granada. A. Torres y López.—p. 79.
*Treatment of Habitual Constipation. M. Belaunde.—p. 85.

Endemic Dysentery in Granada.—Torres describes an epidemic of exacerbation of endemic dysentery in Granada. Fourteen cases in two months in a population of 4,000, in a remote valley in Granada, shows that amebic dysentery cannot be regarded in Spain as an exotic disease.

Hypodermic Treatment of Habitual Constipation.—Belaunde refers to F. F. Martínez' method of subcutaneous injections of sodium sulphate in treatment of constipation. The dose is 2 c.c. of a solution of 25 gm. sodium sulphate (by weight), in 100 c.c. of distilled and sterilized water (by volume). This amount is injected daily subcutaneously in the arm for ten or twelve days. When the stools become fluid, almost diarrheic, the treatment is suspended. The tendency to constipation seems to be permanently cured. In the innumerable cases thus treated, the constipation that had been rebellious for many years has not returned during the months and years since this course of treatment. If the course fails, he recommences with twice or three or four times the doses. But it has never failed in his experience when conscientiously applied, although some cases required thirty or forty injections. If the series is suspended, for any reason, it has to be commenced over again from the first. No saline or other purges must be allowed during the course of treatment or afterward. Belaunde writes to emphasize the *maravillosos resultados* obtained with this hypodermic treatment, and to reaffirm that, done according to Martínez' directions, a cure can be counted on in the overwhelming majority of cases. He summarizes eighty case histories to show the condition before and after the successful treatment. Spontaneous defecation occurred after the fourth injection of the sodium sulphate, and the stools became soft at the seventh, in most of the cases.

Crónica Médico-Quirúrgica, Havana

January, 1919, **45**, No. 1

*Paralysis of the Third Pair. J. S. Fernández.—p. 5.
Hemianopsia from Occipital Trauma. J. S. Fernández.—p. 7.
Influenza and Its Treatment. T. Hernández.—p. 12.
Hemophilia. M. M. Escudero.—p. 16.

Paralysis of the Third Pair.—Santos Fernández states that the girl of 8, in playing, was hit on the head, just back of the

frontal region. When he saw the child, over seven months later, the complaints were of headache in the vertex region, and diplopia, with slight dilatation of the pupil and divergent left strabismus, but no ptosis. On suspicion of inherited syphilis, tentative specific treatment not only cured the ocular disturbances and headache but seemed to promote the growth and normal development of the child.

Medicina Ibera, Madrid

March 1, 1919, **6**, No. 69

*Indications for Treatment in Various Forms of Nephritis. S. Pascual. —p. 189. Conc'n.
Hyperchlorhydria in Spain. R. M. Terol.—p. 193. Cont'n.
Graphic Record of Physical Signs of Pulmonary Tuberculosis. A. N. Blasco.—p. 195.

Nephritis.—In this closing instalment, Pascual discusses the general principles for treatment of nephritis, acute and chronic. He says that acute exacerbation of chronic nephritis may call for operative intervention on account of intense pain, hematuria, oliguria or anuria, or high fever and bad general condition. The latter would seem to contraindicate any operation, but Pousson, Israel, Legueu, Edebohls and others regard this as often imperative. Pascual warns that, whatever operation is attempted, all are grave with chronic disease of the kidney. The general anesthesia required is fraught with exceptional peril in cases of chronic nephritis. Another objection is that chronic nephritis is very frequently bilateral. Painful nephritis may require deep nephrotomy, incising the convex margin of the kidney down to the pelvis. Marsan compiled 82 cases in which this was done, with 66 complete cures and 8 with essential improvement, 3 not modified by the operation and 5 deaths. Pousson has reported 14 cured completely, 2 temporarily improved, no modification in one, and one death among 18 operative cases of nephritis dolorosa. Pascual remarks in conclusion that hematuric nephritis is the one form that benefits most by surgical measures. Hematuria of renal origin generally occurs only in unilateral chronic nephritis, of the type in which the lesions are limited to a few glomeruli. Nephrotomy has given sixteen complete cures in the 37 operative cases compiled by Pousson; the operative mortality was 8.3 per cent. Pascual regards nephrotomy as the preferable operation, generally speaking, when surgical measures are required for nephritis. Next comes decapsulation; nephrectomy only as a matter of necessity.

Revista Médica, Puebla, México

April 15, 1919, **1**, No. 9

*Medical Abortion. A. L. Hermosa.—p. 193.
New Tendencies in Medicine. F. Paredes.—p. 196. Conc'n.
*To Facilitate Intravenous Injection. F. Robles.—p. 203.

Medical Abortion.—Hermosa explains that the progress of medical science in recent years has done away with almost the last necessity for professional infanticide. Cesarean section will overcome contracted pelvis, and we have measures to combat the autointoxication responsible for uncontrollable vomiting, albuminuria of pregnancy, grave jaundice and eclampsia, without sacrificing the life of the child. In conclusion he cites Vinay's statement that all the women delivered prematurely, on account of heart disease, at a certain large hospital died at the time or soon afterward.

To Facilitate Intravenous Injection.—Robles refers to the way in which the veins at the elbow sometimes refuse to swell when constriction is applied above, in readiness for the intravenous injection. To overcome this inhibiting reflex action he has the arm held hanging loose while he diverts the patient's attention.

Revista de Medicina y Cirugía, Havana

March 10, 1919, **24**, No. 5

*Treatment of Elephantiasis of the Leg. J. E. Ferrán.—p. 129.
Case of Prostatic Obstruction. D. Geiringer and J. Campuzano. —p. 136.

Elephantiasis of the Leg.—Ferrán comments on the frequency of elephantiasis in Cuba, and describes a method of treatment which is giving most satisfactory results. In a case illustrated "before and after," there is now no difference in size between the normal and the elephantiasic leg, when before the intervention this leg was enormous. He cuts out two ellipses, down to the muscle, several inches long, axial to the leg but not to each other. He then sutures the lips of the ellipse together, passing the catgut through the skin, then along the edge of the other tissues without traversing them, down to the muscle. After freshening the aponeurosis, the needle is passed horizontally in the depths of the muscle, then out on the other side in the same way. Four or five catgut threads are thus used to suture the lips of the ellipse together in a kind of "anastomotic inclusion," as he says. The lymphatics, veins and arteries form actual siphons by the intimate connection thus realized between the derma and the muscle. Other sutures are taken as usual, which serve for drainage, and a small wick is left at the lowest point of the incision. The operation is done under local anesthesia, and the patient should sit with his leg down at the forty-eighth hour. A compressing elastic bandage aids in the rapid reabsorption of the elephantiasic tissues. They disappear more completely than when masses are excised.

March 25, 1919, **24**, No. 6

*Keratomalacia and its Treatment. R. Guiral.—p. 157.
Influenza at Batabanó. P. Pons y Zamora.—p. 160.

Keratomalacia and Its Treatment.—Guiral emphasizes that every ophthalmologist has to keep up with the progress in general medicine in order to practice intelligently. If he restricts his studies to the literature on his specialty, he will be neither an ophthalmologist nor anything (*ni oculista ni nada será*). This is especially evident in respect to keratomalacia. Until recently, he says, the family physician when he found he could do nothing in xerophthalmia, and that blindness was impending, ordered the child taken to an ophthalmologist, and the latter had to bear the stigma of the child's becoming blind, besides his sympathy with the family's grief over the misfortune. Recent research on vitamins has solved the mystery of keratomalacia, and shown how to ward it off and cure it. Cod liver oil and raw milk contain the vitamins the system is craving, but the families would shrink from giving either of them to a 2 months' babe with enteritis. In their ignorance of vitamins, they would consider such advice preposterous. Fortunately, however, lemon juice answers the same purpose, and this can be given to young infants. He orders strong lemonade, two lemons to a tumbler of sweetened water, and has the child given four table spoonfuls a day, by the mouth if possible, if not, by the rectum in four small enemas. By the end of eight or ten days not only the eyes return to normal, but the general condition shows marked improvement. He has thus treated twelve infants with keratomalacia, and except for a slight cloudiness in two of them, not seen until very late, all the eyes are completely normal.

Revista de Medicina y Cirugía Prácticas, Madrid

Feb. 28, 1919, **122**, No. 1544

Influenza in Granada. D. A. Ayala.—p. 225.

Semana Médica, Buenos Aires

March 6, 1919, **2**, No. 10

Simple Megacolon. Complications and Treatment. H. Taubenschlag. —p. 229.
Mortality of Buenos Aires in Last Decade. E. R. Coni.—p. 245.
Manometric Control of Injections. N. L. Cúneo.—p. 246.

Siglo Médica, Madrid

March 15, 1919, **66**, No. 3405

The Conception of Pretuberculosis. B. Gil y Ortega.—p. 205. Cont'n.
Treatment of Pneumonia. Pinilla.—p. 209.
Commercial Hydrogen Dioxid. M. M. Ibáñez.—p. 210.
Introduction to Study of Operative Surgery. J. G. Capdevila.—p. 211. Cont'n.

Vida Nueva, Havana

March, 1919, **11**, No. 3

Scientific Pan-Americanism. J. E. Lopez-Silvero.—p. 49.
Unethical Practices in the Practice of Medicine.—J. B. Capella.—p. 55.
Luminescence and Radioactivity. A. Pratelle.—p. 66.

Mededeelingen v. d. Burg. Geneesk. Dienst, Batavia

1919, No. 3, Parallel Dutch-English Edition

*The Susceptibility of Anophelines to Malarial Infections in Netherlands India. N. H. Swellengrebel, W. Schüffner and J. M. H. S. de Graaf.—p. 1.
*Biology of Malaria Mosquitoes in Sumatra. W. Schüffner, N. H. Swellengrebel, J. M. H. S. de Graaf and A. Mochtar.—p. 65.

The Mosquito Hosts of Malaria in Netherlands India.—Swellengrebel and his co-workers emphasize the importance of distinguishing in different places the specific type of mosquito involved in the transmission of malaria in that region. This renders it possible to concentrate the prophylaxis on this special type of mosquito, and leave all other species unmolested, thus saving an enormous amount of labor and expense when a systematic campaign is undertaken. They have been studying in the Netherlands Indies which species of mosquitoes there transmit malaria. They found that conditions in this respect differ materially from those on the Malay Peninsula, the experimental index of infectability being found very high in the *Myzomyia ludlowi* which is a true house mosquito. The natural index of infectability is a more reliable means of investigation, they are convinced, when certain precautions are taken, than the experimental findings. This also incriminated the ludlowi as by far the most important carrier of the malaria parasites. They established the natural index from 100 specimens, then again for the whole lot, including 100 new specimens, and so on, until the index showed no further variation, which usually occurred with about 700 specimens. One of the charts shows the experimental index of infectability for the ludlowi to be 100 per cent. for pernicious malaria, and nearly the same for tertian and quartan, while the nearest approach to this was the sinensis, with a total of less than 50 per cent., and the kochii with 18 per cent. The natural index of the ludlowi was six times higher than its next competitor, the rossii, and the sinensis was far below the latter. They suggest that the number of oocysts developing in a mosquito may influence the gravity of the disease as all do not attain maturity at the same time. Two Europeans who volunteered for the experiment were bitten by mosquitoes that contained 100 oocysts and the resulting infection was rather serious, although quinin was given immediately at the first sign of fever. They add that the ludlowi is hardly mentioned in relation to malaria by the leading bacteriologists. No species of mosquito is known yet which is never pernicious, and cross-breeding with new species may produce new dangerous species. [Manson quotes Christophers that the latter found the ludlowi the transmitter of malaria in the Andaman Islands, but only near brackish water.—Ed.]

Biology of Malaria Mosquito in Sumatra.—This illustrated article reports the results of extensive study of the life habits of the ludlowi, which, as stated in the preceding abstract, shows an exceptionally high index of infectability for malaria. It is a house mosquito, but leaves the house to deposit its eggs, and the distance covered to the breeding place may exceed 1 km., three-fifths of a mile. The ludlowi seems to prefer brackish water and ponds grown over with algae.

Hospitalstidende, Copenhagen

April 2, 1919, **62**, No. 14

*Focal Symptoms with Senile Dementia. E. Bertelsen and A. Wimmer.—p. 421.
*Causes of Fluctuations of Leukocytes. G. Jørgensen.—p. 432.

Focal Symptoms in Senile Dementia.—Bertelsen and Wimmer describe the clinical and necropsy findings in three cases of gradually developing senile dementia, without anything to indicate cerebral hemorrhage, but with word deafness, echolalia and defects in reading, writing, etc., with paraphasia but no motor disturbances. The fourth case presented merely hemianopsia as the focal symptom, without disturbances in speech, and no arteriosclerotic changes—merely atrophy; but arteriocapillary fibrosis was marked in the others, as is shown in the microscopic findings.

Fluctuations in the Leukocyte Count.—Jørgessen refers to fluctuations under emotional stress or *psykiske Irritamenter*, as he styles it. He examined six girls of 14 or 15, all frightened at the idea of having blood drawn from the ear. Blood was drawn at intervals, four times, and the leukocyte count varied widely, the numbers being much higher in the blood taken immediately after the incision than a few minutes later. There was no change in the differential count, which excludes rapid production of new blood. The modifications observed resembled those which follow administration of strophanthin, and they thus suggest a similar mechanism, namely, a change in the force of the heart action and consequently a different distribution of the leukocytes.

Norsk Magazin for Lægevidenskaben, Christiania

March, 1919, **80**, No. 3

*Etiology and Treatment of Exophthalmic Goiter. C. Bergh.—p. 217.
Hydrogen Ion Concentration in the Body. H. Salvesen.—p. 253.
*Albuminuria in Recruits. E. Platou.—p. 271.
*Ophthalmia from Exposure to Electric Light. G. W. Keyser.—p. 274.

Etiology and Treatment of Exophthalmic Goiter.—Bergh is convinced that the tonsils, nose or throat are often the primary source of the infection causing the thyroid derangement responsible for exophthalmic goiter. He has now a record of 11 cases in which treatment was directed to cure the pathologic conditions in nose and throat, and the exophthalmic goiter subsided. He cites further Salling's report on 97 cases of exophthalmic goiter in 13 of which the disease had followed immediately on an infectious sore throat, and he has found 42 on record of a similar briefly preceding infectious disease. In 3 of Salling's cases an acute infectious disease caused the flaring up of the apparently cured exophthalmic goiter, and in 20 others the exophthalmic goiter became much worse after an intercurrent acute infection. No less than 60 of the 97 displayed a tendency to infectious sore throat. In 62 of the 97 cases the exophthalmic goiter began evidently as a local process in the thyroid. These data sustain Bergh's assertions that chronic catarrh of the nasal mucosa is not a superficial, harmless thing, but may spread along the lymphatics to the thyroid. Migraine and cephalalgia have been frequently traceable to rhinopharyngitis, in his experience, and now he adds exophthalmic goiter to this group, and sustains his assertions by the success of treatment of the rhinopharyngitis. As clinically normal conditions are restored in the nasal mucosa, the secondary affections subside. He treats the mucosa with massage, and commends the efficacy of this absolutely harmless treatment. It removes the chronic source of the infection, and the process in the thyroid then dies out. The outcome is better in the cases of soft goiter. About thirty-five applications of massage were required in his cases, to never over forty-two.

Albuminuria in Recruits.—Platou relates that he found albuminuria in 12.6 per cent. of 310 recruits examined at the training school near Christiania, three hours after a test exercise. The albuminuria generally disappeared after a night's rest, and the proportion of men presenting albuminuria grew constantly less as the training progressed.

Electric Ophthalmia.—Keyser reports five cases of ophthalmia from exposure to intense electric light in a calcium carbid factory. It closely resembled snow and lightning blindness. Four of his cases were mild but the fifth was quite severe. This patient had an extra exposure, but vision returned to normal after twenty-four hours. In the other cases the disturbance was only temporary (ten minutes). In cases with more protracted disturbance, a traumatic neurosis may have cooperated. Keyser reviews experimental and clinical research in this line that has been published, and urges the necessity for protecting the eyes against repeated damage of this kind. In treatment a 2 per cent. solution of cocain acted like a charm in his and Hill's cases. In the severer cases, little can be done, but the disturbance usually retrogresses in time.

Ugeskrift for Læger, Copenhagen

March 27, 1919, **81**, No. 13

The Influenza Pandemic of 1918. C. A. Hansen.—p. 551.

April 10, 1919, **81**, No. 15

* Clinical Study of Influenza. V. Scheel.—p. 627.
Study of the Blood in Influenza. I. C. Heuch.—p. 647.
Influenza among the Personnel of Public Hospital. J. Buchholtz.—p. 651.